

September 1952

# house + home

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# house+home

September, 1952

Published by TIME Incorporated

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HOUSE & HOME is published monthly by TIME Inc., Time & Life Building, 9 Rockefeller Plaza, New York 20, N. Y. Yearly subscription payable in advance. To individuals or firms (and their employees) engaged in building—design, construction, finance, realty; material distribution, production or manufacture; government agencies and supervisory employees; teachers and students of architecture and trade associations connected with the building industry; advertisers and publishers: U.S.A., Possessions and Canada, \$5.50; Pan American Union and the Philippines, \$9.00; elsewhere, \$12.00. To those not connected with the building industry: U.S.A., Possessions, and Canada, \$7.00; elsewhere \$17.50. Single copies, if available, \$1. All copies mailed flat. Copyright under International Copyright Convention. All rights reserved under the Pan American Copyright Convention. Entered as second class matter January 11, 1952 at the Post Office at New York, N. Y. Copyright 1952 by TIME Inc.

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# How Kenner makes his "Livable Homes" more salable!



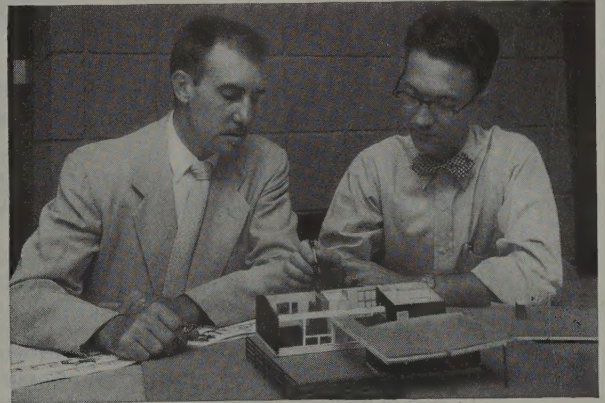
"Livable" well describes the Vista Val Verde Ranches homes being erected by Livable Homes Co., in the foothills of the picturesque Wasatch Mountains at Provo, Utah. A

roomy floor plan, carports, attractive modern fireplaces and vertical paneling in living rooms are a few of the many "wanted" features of the one-floor, three-bedroom homes.

## Careful Planning

"You'd be surprised at how useful a scale model can be—for improving house design and for pointing out selling features to prospective buyers," says Delmar C. Kenner, Manager of Livable Homes Company.

The Provo, Utah, builder, shown here (left) poring over a model with Architect William Rowe Smith, says, "To end up with more salable homes, design for comfort—with an awareness of present-day trends in living, and use well-known, nationally advertised materials."



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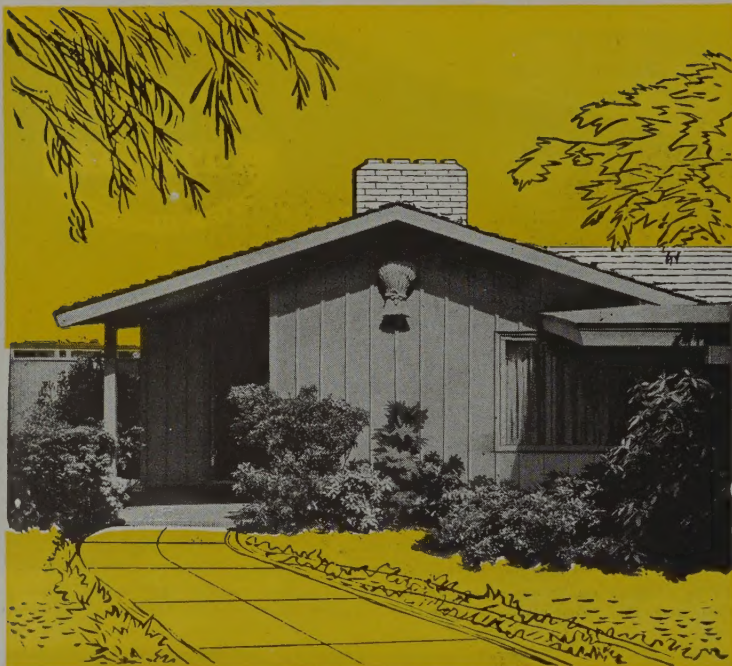


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## PANEL DISCUSSION

**California Architects  
Use Plywood Shear Walls**

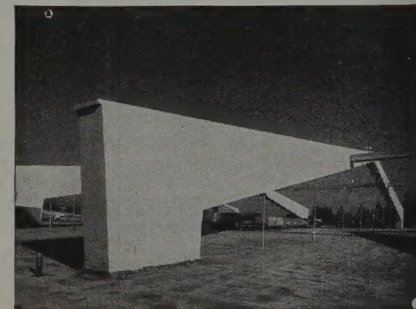


Architects Smith and Williams, Pasadena, Calif., are making use of plywood shear walls in many of their current homes to permit use of large glass areas on exterior walls. Box-girder type shear walls compensate for loss of rigidity and also permit great freedom in placement of non-bearing interior partitions.

The shear walls are carefully engineered to handle the wind and seismic loads which might be encountered. Calculations are based on the weight of the house, exterior surface area and floor area. Studs 2x4, 2x3 and 1x3 are used depending on strength requirements. According to the architects, plywood is the only material which can be used satisfactorily with such small studding. In the photo above, shear wall is at right; it is the only one in this particular home which uses 2x4 studding.

Where the shear wall is on the inside,  $\frac{3}{8}$ " PlyPanel grade plywood is generally used. Exterior plywood is used for the occasional short shear wall that is on an outside wall. Nailing is important and proper nail placement must be calculated; usually it is on six-inch centers. For additional information on shear walls and other plywood use-data, write Douglas Fir Plywood Association, Tacoma, Wash.

**Plywood Shapes Unusual  
Concrete Roof Frames**



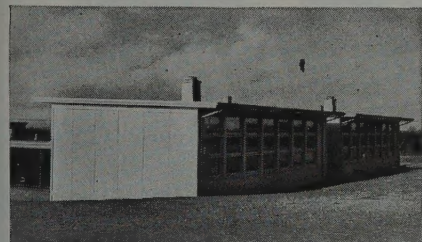
Plywood-formed concrete frames were used to replace conventional posts and roof trusses to achieve an unusual degree of interior flexibility in the Fred Meyers Burlingame Shopping Center Building, Portland, Oregon. Photo shows frames viewed from roof; vertical haunches project down through the roof to ground. Trussed wood joists are suspended from tie-beams secured to the frames. Because the frames are a definite architectural feature, concrete



had to be smooth, fin-free. According to Leslie E. Poole, engineer in charge of construction, plywood offered the simplest, least expensive method for obtaining the smooth surfaces. In fact, because of its smooth, neat appearance, the concrete required no further finishing once forms were stripped. Exterior PlyForm panels were re-used up to eight times in forming the five frames. The building was designed by Engineer Leslie E. Poole; contractor: H. M. Hocken, Portland.

### Portable Units Help Solve Schoolroom Shortage

To solve pressing classroom shortages due to shifts in population, school systems in many communities are turning to portable classrooms as a quick and economical solution. In Tacoma, Washington, 60 are used by the city's schools. Thirty-five are of lightweight plywood construction; ten were built last year by E. Goettling & Sons, general contractors, from revised designs by Mock and Morrison, architects.

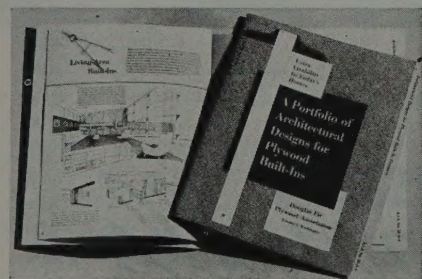


"We've been using plywood for four years," says James Hopkins, assistant superintendent of schools in charge of construction. "The portable schoolrooms are fully as well built as the average house and we expect them to be good for 50 years. Plywood construction is lighter and gives maximum bracing strength—a must in movable buildings."

Each building is 24'x36'. Plywood is used for subfloors, roof sheathing, paneling, built-ins and exterior siding. Modular design based on standard plywood panels, helps speed work and cut costs. Plywood not only makes a sounder, tighter building, but it presents a clean, modern appearance—a far cry from the unpleasant "temporary look" of other similar structures.

### Design Portfolio Available

A portfolio of prize-winning designs for plywood built-ins is now available to architects, designers and builders. The booklet contains over 50 designs judged best in the "Better Living Home" architectural contest. For free copy write Douglas Fir Plywood Association, Tacoma 2, Wash.



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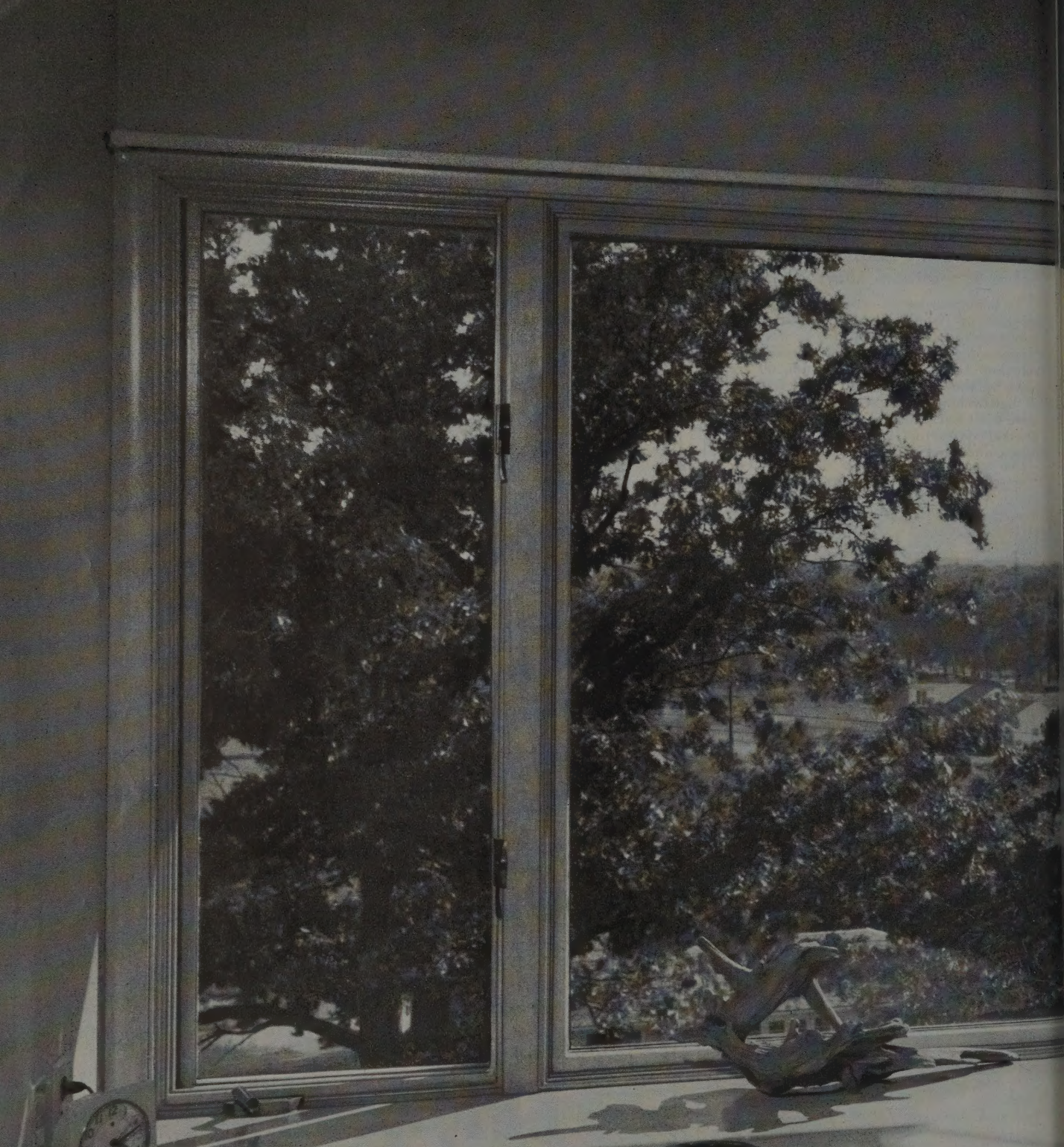
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# Homebuilders' use of architects growing stronger in many areas

Relations between operative homebuilders and architects are growing stronger and more profitable for both parties in 15 out of 39 areas covered by a HOUSE & HOME survey. In four additional cities it is felt a trend to greater use of architects by market builders is nearing, and might blossom as 1) relaxed credit restrictions reopened the new house market at \$15,000 and up, and 2) new house sales in general became more difficult.

Most of the encouraging reports of better relations, better construction, and better sales results, came from the East Coast and far West. Boston, Hartford, Long Island, Savannah, Jacksonville and Miami reported progress in the East; San Francisco, Los Angeles, San Diego and Phoenix in the West—not overlooking Seattle, the subject of a comprehensive special report starting on page 85.

Atlanta, Chicago, Kansas City and Denver were the four other cities making favorable reports, and Buffalo, Louisville, Memphis and Dallas were the four that felt an uptrend could be expected within a relatively short time.

**Gaining powerful momentum.** Boldest of the predictions emanating from the survey was that of Herbert Millkey, the AIA Georgia chapter president: "Within the next few years builders not using architects will be put out of business if the number using them keeps increasing even at its present rate."

Millkey also gave the most apt summary of three of the main reasons for the trend that were cited by many architects and builders in various cities:

▶ "The builders' approach to architecture has changed a great deal. The trend in building today is modern, and builders have no way of designing modern homes, particularly those with modern heating and air-conditioning systems.

▶ "More and more builders are realizing that a well-coordinated set of drawings actually saves them money and gives the house a larger market value.

▶ "The people have been educated, and more and more of them know that a designed house can be better and bigger than the average home built for the market."

**Greater salability.** Eloquent testimony on the increased salability of architect-designed houses came from several areas. At Resida, outside Los Angeles, houses designed by Edward H. Fickett, AIA for Ray Hommes' Sherman Park development have been selling very well, while sales by other nearby San Fernando Valley builders have been languishing. As a result Hommes is preparing to erect another 1,200 units. Another Fickett-designed project, the 435-unit Suncrest Park being built in Torrance by Volk-McLain was sold out in two weeks, although all sales of these \$6,995 houses were on conventional terms with no FHA or VA financing. Now other

builders are taking more notice of Fickett and other architects.

▶ In Phoenix employment of architects by large and small operative builders alike has become widespread because 1) those who hired them have had it proved in dollar and quick turnover that an architect who knows his business can design a house that sells, and 2) buyers gravitate toward

architect-designed houses for functional livability that builders failed to get into nonarchitect houses. Among several examples, the Burdett Construction Co. called in architect Mel C. Ensign to redesign concrete tiltup houses they were building at Tempe and found they not only made more money through more sales, but also saved on construction costs through better design.

▶ Said William Blackfield, engineer-builder who has erected more than 4,000 San Francisco area houses since the war: "Architect-designed houses have more salability. People will be putting more and more scrutiny on the houses they buy. You have to have an awful lot of things in houses that we builders can't always think of, and these fellows can."

▶ In Miami large-scale builder E. J. Mackle put it this way: "We're in a buyers' market in greater Miami and competition grows keener almost daily. Builders are going to have to use the design skill of architects to stay in the swim."

**Revolution in relations.** Most heart-warming account of an improved builder-architect relation resulting from a building firm's conversion to the value of architectural service came from California. Perego & Gavella, who are building the first 30

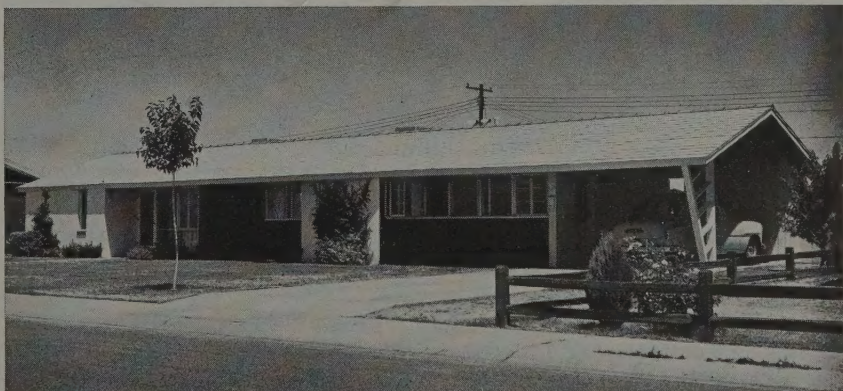
## PHOENIX HOUSES IMPROVED BY ARCHITECTURAL SERVICES

Stuart A. Weiner



Prefabricated houses of the Mobilhome Corp. of Phoenix were selling moderately well when the firm engaged architects Arthur and Charles Schreiber to advise on basic design about a year ago. Now with sales at 16 a month the company is hard pressed to keep up with orders. This two-bathroom, two-bedroom-and-study model sells for \$10,400.

Robert Markow



This masonry and frame window wall "Tri-Bed Hacienda" house in northwest Phoenix was designed by John Sing Tang, AIA, and was sold for just under \$12,000 when erected by Phillips & Lusk in 1950. More elaborately finished models to \$19,500 are now being built in four subdivisions.



## BUILDER-ARCHITECT HOMES IN THREE DIFFERENT REGIONS

*Hedrich-Blessing*



Construction view of one of the \$28,000 to \$29,500 houses being erected in Glencoe, Ill. from plans by George Fred and William Keck. The builder is calling this 24-unit project Keck Homes, and the architects are sticking with the job until completed. They also supervised the site planning.

*Haskell-Marblehead, Mass.*



David J. Abrahams & Associates, Boston architects, designed this house for a 60-unit development known as George Hill Park, in South Lancaster, Mass. This firm believes there will be an increasing use of architects by builders to obtain the "different" features that more purchasers are demanding.

*Miami Herald*



This two-bedroom and carport house in the Pine Tree Estates development of Maston G. O'Neal near Miami was designed by Alfred Browning Parker and is sold on a half-acre plot for \$12,000.

### NAHB plans to erect own Washington headquarters

NAHB will become intensely interested in the commercial construction field next year, but only for a single building. The association has acquired a site in Washington, on L St. between 16th and 17th, for a \$1 million headquarters building of its own. Preliminary plans are for a structure 4 to 8 stories

high, with NAHB occupying two floors and renting the remaining space to government agencies or commercial tenants.

Edward R. Carr, builder and Washington Real Estate Board president, heads the building committee, and Alvin L. Aubinoe, capital architect and builder, is another member and might receive the contracts. Site is half block from Russian Embassy.

houses in a 150-unit colony near Sunnyvale, called in Anschen & Allen, San Francisco architects who have designed several developments that have received awards for their excellence.

Mrs. Grace Perego's enthusiasm for their work is almost more than she can express, although it developed slowly.

"When Mr. Anschen told me 'you'll have to give me an agreement that you won't make any changes without my written consent,' I thought, 'I don't know whether I'm going to like that.'"

But after getting acquainted with Anschen and working with him she was delighted. "Anybody who's a better driver than I am, I'll let him have the wheel," she says. "Mr. Anschen is really a dynamo. He handles the minutest details. We can't put a shrub in unless he tells us where to put it."

FHA has appraised the houses at the sale price of \$13,000, according to Mrs. Perego, and they have almost all been sold, although only one besides the model has been completed.

"I've had a lesson after 35 years in this business," she says.

**Keck project in Glencoe.** Another outstanding example of new operative builder-architect relations has occurred in Chicago, where architect brothers George Fred Keck and William Keck have entered the market-builder field on the theory that a mass-produced house can also be well designed. In the 24-unit modern development in Glencoe that they planned for builder Harold Friedman these architects give every customer individual attention. They also are supervising the job to completion, with the builder confining his activity exclusively to actual construction work and the matter of sales.

All but two of the \$28,000 to \$29,500 houses have been sold already. "But if I tried this two years ago I'd have been out of luck," says Friedman. "Modern houses are just beginning to come in. It wouldn't have made sense to hire such expensive architects for the traditional \$13,000 houses."

**Small builders join trend.** Reports from San Diego, Atlanta and Hartford said small builders also are beginning to make more use of architects. "The small builder needs an architect even more than the mass builder because of a more selective market," said Clayton Johnson, secretary of the Hartford Home Builders Association. In the same city Norris F. Prentice, architect who has designed houses for 10-unit and 6-unit tracts, said small builders engaging architects are not doing so to offset price competition of larger builders, but because they find their houses sell faster as a result of eye appeal inside and out when designed by architects.

**Fee fuss still flourishes.** From cities that reported no trend to greater use of



architects there generally came picturesque recapitulations of fee disputes between the mass builders and architects.

► Said John A. McCague, vice president of Bridgeport builders who will erect about 225 units this year: "I know of half a dozen architects who would consider it a gross insult to their professional standing if I asked them to design a \$10-\$12,000 home that I build. And yet the toughest assignment an architect can get is to design a good small house."

► One leading Bridgeport banker said architects are unnecessary for mass projects, and he would not allow a builder a higher value on a house for architectural service. But F. J. Brennan, mortgage vice president for powerful First Federal in the same city declared: "Most builders are too old-fashioned. You must use a sledgehammer to get them to accept new ideas. This institution will always give a higher mortgage if the builder has used an architect. It makes good sense. A house specially designed for a special project will always be more salable than just another stock plan job."

In Atlanta, however, a Georgia architectural cracker put the whole thing in a nutshell: "Many builders still have to be converted. It may take the desire to save a dollar rather than an appreciation of the aesthetic value of good architects to convert the old-time builder. But he is being converted."

## Michigan license law cuts architectural requirements

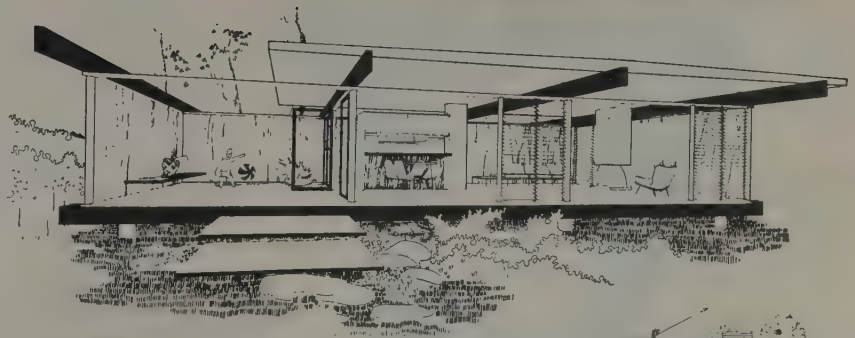
Changes in Michigan's license law for architecture and professional engineering effective this month may further reduce an already slim builder-architect relationship in that state.

The amended law requires the seal of a registered architect or engineer to obtain building permits for houses with floor areas of 2,500 sq. ft. or more. The old law required approval when the cost exceeded \$15,000.

William Baker, registered architect and partner in Cox & Baker, long-established Grosse Pointe builders, estimated not more than 2% of Detroit-area homebuilders use architectural services. In many instances, he said, several operative builders use identical plans. Edward W. Pratt, member of Builders Association of Metropolitan Detroit, estimated 85% of the houses erected in the area last year lacked architectural service.

## Apartment-house builders seeking 80% FHA loans

Finally running out of 608 apartment construction commitments, a small number of New York and Chicago builders are planning rental projects under the new FHA section 207, Title II, which provides for government insurance of approximately 80% mortgage loans.



**PRIZE WINNER** for the design for an all-plywood house of 1,100 sq. ft. that could be built on a standard inside city lot on a budget of \$11 per sq. ft. and qualify for normal financing was this sketch and floor plan by William L. Rudolph, of Pasadena. First prize in the contest, sponsored by Architectural Products and 18 leading national manufacturers was \$2,250. Additional winners were: 2d prize, Herbert L. Hawthorne and William E. Sexton, of Detroit and Plymouth, Mich.; 3d prize, Chapin, Johnson & Ridley, of Seattle; and 4th prize, Henry J. Lagorio, Roy Y. Maru and Roger F. Hooper, architects. Judges of the national competition were Whitney R. Smith, Raphael Soriano, A. Quincy Jones and Arthur Edwin Mann, all AIA members.

## Foley, touring Alaska, finds igloo loans booming

Domestic builders may well envy a streamlined home-loan program HHFA has set up for Alaskan Eskimos. There is no folderol like recording fees, title checking, and survey charges. There isn't even a mortgage.

In July, on a 10-day aerial inspection trip to Alaska, HHFA Administrator Foley found that the igloo loan phase of the territorial housing program, now in its third year, was chalking up sizeable gains. Here's how it works:

Eskimo families in "remote" areas can borrow up to \$500 from the Alaskan Housing Authority to improve their sod houses by adding floors and roofs or to build new, boxlike frame structures 14' x 18'. Loans are unsecured, repayable in five fishing seasons at 5½% interest. So far, the authority has made 606 loans totaling only \$192,650 of its \$1 million kitty. HHFA calls the repayment record "excellent." However, the agency stands ready to grant a moratorium in slack fishing or hunting years.

Eskimos do all the work themselves, coached by native teachers and missionaries. Principal materials used are shiplap vapor seal, sheet roofing, 2' x 4' framing, window sashes, and nails. The incidence of TB among the natives, which is the highest in the world, has been reduced as much as 80% by such renovations and new quarters. While sod houses provide quarters during winter months, they grow damp and unhealthy in spring thaws. Wooden flooring

and leakproof roofs make them far healthier.

Sometimes, families who are the proud possessors of new frame houses burrow back into their earth-walled igloos with the return of winter.

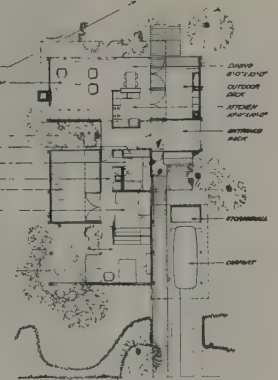
## FHA issues warning on unsafe play-area surfaces

Paved surfaces under swings and other recreational facilities in apartment projects are often the cause of fatalities, according to results of a study by the National Recreation Association forwarded to all field offices by PHA. Maintenance savings obtained by using asphalt and concrete surfaces are negligible compared to injury hazards, PHA informed local housing authorities. In one city the playground liability insurance for one paved project has increased 300% in four years because of serious accidents.

NRA rated surfaces for safety in the following order: sand, dirt, sand mixtures, turf and sawdust.

## Survey finds conversions far ahead of estimates

Conversions created almost as many additional dwelling units as all new rental construction from 1940 to 1950 in Baltimore and Norfolk, the HHFA and BLS were surprised to discover in a recent survey. Most conversions were in the lower-rental ranges, and many of them in violation of local ordinances. The conversions in these cities are at a much greater rate than previously assumed.





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One of the **easiest** ways to sell a home **quicker** is to give the buyer what he wants... Builders everywhere say homes with metal windows sell faster because home-owners prefer metal windows over any other type... A recent study here at Ceco substantiates what builders believe... what they know to be true of customer preference. Both builder and buyer said for example, they prefer Ceco metal windows, because they are easy to clean and maintain, won't rust, warp, stick or swell and are truly better looking... Slender muntins mean more light gets in... more

view, too... We believe it is significant that our study showed twice as many home-owners selected aluminum windows in the planning stage as chose a competing product... Yes, it's evident the swing is to metal windows... that is why we feature Ceco-Sterling Double-Hung Aluminum Windows and Ceco Metal Casements. If you are a builder who hasn't featured metal windows, let us tell you how you can make more by giving people what they want... Ceco-Sterling Double-Hung Aluminum Windows and Ceco Metal Casements.



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# Five per cent cash for veterans is biggest question as Reg. X suspension date nears

Unless private housing starts in August soared miraculously past 110,688 units, Reg. X faced compulsory suspension Oct. 1. But instead of grudgingly waiting until the law allowed no alternative, the administration was expected to capitalize on the inevitable and extinguish it sooner, clothed if possible to appear as a gesture of "assistance" to impatient veterans and civilians who have been barred from purchasing new houses only because they lacked sufficient cash.

**Legislative suspension.** Congress voted to lift restrictions whenever starts drop below 1.2 million a year, for three months in a row, with allowance for seasonal variations. June and July starts (106,000 and 104,000) were both below this mark, and August starts have generally declined from yearly May-July peaks (see chart).

Private starts in July were 102,400, the first month in almost two years that the 100,000 mark was passed by private homebuilding. But there was nothing to indicate any unprecedented or substantial upturn in August that might approach 110,688, the seasonally adjusted figure that would mean construction at the 1.2 million-a-year rate.

With Regulation X thus apparently slated

to go, lenders and builders endeavored to figure what their new cash and monthly payment schedules might be. But only rough approximations were possible, because the government will still retain a small, superficial power to regulate credit through two provisions of the relaxation law.

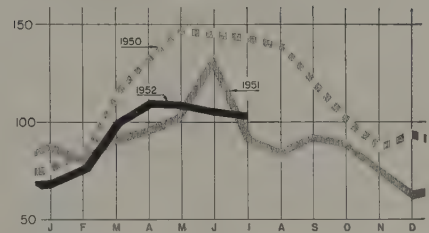
One of these permits the revival of Reg. X if housing starts go over the 1.2 million-a-year rate again for three months in a row. The other allows the imposition of down-payment requirements not in excess of 5% during periods while full credit restrictions are in suspense—a provision that apparently has misled many persons to the belief that all sales will have to be made for cash payments of only 5% or less when Reg. X is lapsed.

**Former rules apply.** But this doesn't end prior FHA sections that permit only 80 to 95% loans, nor state banking laws that generally limit conventional first mortgages to 65 to 75%. In these fields this provision's only possible effective application might be to forbid additional borrowing or second mortgages in amounts that allowed the buyer to put in anything less than 5% of his own original cash.

The greatest uncertainty arises over VA

## HOUSING STARTS

IN THOUSANDS OF UNITS



Source: Bureau of Labor Statistics

**HOUSING STARTS HELD FIRM** during July, above the 100,000 mark. The 104,000 total was 2,000 units below June, but 13,500 units above July '51. Private housing rose slightly last month, sparked somewhat by increased defense and military residential building, while public housing nose-dived sharply to 1,600 from 6,800 units in June.

loans on which this provision may have far greater relative importance. Prior to Reg. X veterans were eligible for 100% loans in almost any amount. In New York many purchased \$20,000 houses on 100% mortgages. Under a suspension of Reg. X this presumably would be possible again—but the government also could impose a 5% cash requirement on all VA loans beginning at any particular sales price.

Pending the issuance of the general suspension orders, and whatever supplementary new regulations might be issued under this 5% rule, exact schedules of new terms cannot be calculated. The table below, how-

## APPROXIMATE TERMS ANTICIPATED UNDER CREDIT MODIFICATIONS

### FHA-INSURED LOANS

Value	Cash down payment			Monthly payments		
	Anticipated	Current	Expected	Anticipated	Current	Expected
	pated	Reg. X	decrease	pated	Reg. X	decrease
\$ 5,000	\$ 250	\$ 250	—	\$24.78	\$27.09	\$2.31
6,000	300	300	—	29.74	32.50	2.76
7,000	350	350	—	34.69	37.92	3.23
8,000	650	950	\$ 300	41.91	40.20	+1.71
9,000	950	1,200	250	45.90	44.47	+1.43
10,000	1,250	1,450	200	49.89	48.75	+1.14
11,000	1,550	1,900	350	53.88	51.89	+1.99
12,000	2,400	2,350	+50	54.74	55.02	.28
13,000	2,600	2,800	200	59.31	65.93	6.62
14,000	2,800	3,250	450	63.87	69.48	5.61
15,000	3,000	3,700	700	68.42	73.03	4.61
16,000	3,200	4,250	1,050	72.99	75.94	2.95
17,000	3,400	4,800	1,400	77.55	78.85	1.30
18,000	3,600	5,350	1,750	82.11	81.76	+ .35
19,000	3,800	5,900	2,100	86.67	84.66	+2.01
20,000	4,000	6,450	2,450	91.22	87.58	+3.64
21,000	5,000	7,000	2,000	91.22	90.48	+ .74
22,000	6,000	7,750	1,750	91.22	92.10	.88
23,000	7,000	8,500	1,500	91.22	93.71	2.49
24,000	8,000	9,250	1,250	91.22	95.33	4.11
25,000	9,000	10,000	1,000	91.22	96.94	5.72

### VA-GUARANTEED MORTGAGES

Value	Cash Down payment			Monthly payments		
	Anticipated	Current	Expected	Anticipated	Current	Expected
	pated	Reg. X	decrease	pated	Reg. X	decrease
\$ 5,000	\$ 250	*	\$+250	\$22.68	\$26.40	\$ 3.72
6,000	300	*	+300	27.22	31.68	4.46
7,000	350	*	+350	31.75	36.95	5.20
8,000	400	\$ 380	+20	36.29	40.23	3.94
9,000	450	480	30	40.82	44.98	4.16
10,000	500	580	80	45.36	49.73	4.37
11,000	550	740	190	49.90	54.16	4.26
12,000	600	900	300	54.43	58.60	4.17
13,000	650	1,450	800	58.97	70.00	11.03
14,000	700	2,000	1,300	63.51	72.72	9.21
15,000	750	2,550	1,800	68.04	75.45	7.41
16,000	800	3,100	2,300	72.58	78.18	5.60
17,000	850	3,670	2,820	77.11	80.78	3.67
18,000	900	4,240	3,340	81.65	83.39	1.74
19,000	950	4,810	3,860	86.18	86.00	+ .18
20,000	1,000	5,380	4,380	90.71	88.60	+ 2.11
21,000	1,050	5,950	4,900	95.25	91.21	+ 4.04
22,000	1,100	6,550	5,450	99.79	93.03	+ 6.76
23,000	1,150	7,350	6,200	104.33	94.84	+ 9.49
24,000	1,200	8,050	6,850	108.86	96.65	+12.21
25,000	1,250	8,750	7,500	113.40	98.48	+14.92

**ANTICIPATED PAYMENTS** in the FHA tables above are based on varying down payment and maturity regulations in different price brackets that would prevail except for Regulation X. The anticipated VA terms allow for a special 5% cash requirement that could still be imposed under a suspension of Regulation X. This also might be waived by the government,

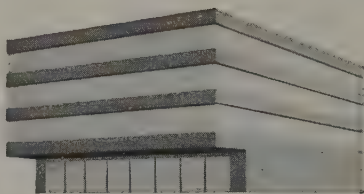
particularly for lower, if not for higher sales prices, in which event new VA terms would be more liberal than those shown above.

\*—Current VA credit regulations require payment of closing costs in cash; previously they could be included in the mortgage.

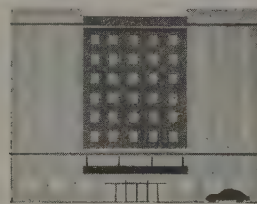


whatever you build... whether  it's a school

... a hospital



... a hotel



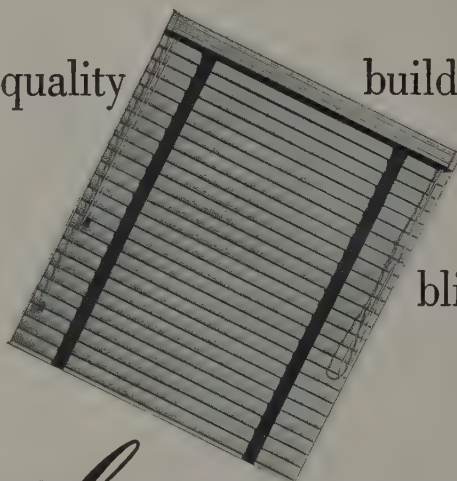
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ever, is believed to be a close approximation of what can be expected for FHA and VA financing, except that the VA figures have been calculated conservatively, as if subject to a required 5% cash payment all down the line.

In conventional financing the greatest effect from suspension of Reg. X will be elimination of the ban on second mortgages or other borrowing to complete a sale if total "credit" exceeds old Reg. X terms. On first mortgages the federal restrictions for sales up to about \$17,000 were generally less severe than banking law regula-

tions governing mortgages in most states.

**Commercial curbs going.** The Reg. X restrictions on credit for commercial construction also appear likely to be terminated along with the residential credit limitations. This is not mandatory, but additional commercial construction that might result would not total more than \$150 million, it is estimated, and the federal reserve would be reluctant to maintain an administrative staff for the sole purpose of controlling such a small sector of the economy.

## Mortgage market temporarily softening, may react later to firmer money policy

Biggest long-standing paradox in government and housing: through rent control the government holds down the price of the commodity because it is in *short supply*; in mortgage financing the government holds down the price of the commodity, on any loans it will insure or guarantee, because there is supposedly a *surplus*.

Only time may reveal how this contradictory situation will be resolved, but meanwhile there is another short-term paradox in financing for which there is a plausible explanation. That is the end of the Truman administration's "easy money" policy and a general trend to tighter money, while simultaneously the mortgage market faces somewhat softening conditions.

**Higher rates in offing?** Explanation for this seeming conflict, according to mortgage experts, is the absence of a direct or immediate interaction between long-term and short-term money rates. Thus the payment of 2% by the Treasury for 1-year money, the highest rate on this type of financing in 20 years, would not be reflected in mortgage rates unless and until long-term rates hardened as well.

In August, however, steadily accumulating savings and amortizations were giving principal mortgage sources more available cash than at any time since government bonds were "unpegged" in March, 1951. Insurance companies were increasing their mortgage commitment quotas to regional offices and correspondents. Some institutions unable to acquire sufficient conventional loans to hold down mounting cash surpluses, were turning to 4% VA paper again (at discounts) or going afield to other states to buy FHA-insured obligations.

**Trends point the direction.** There was increasing expectation, however, that prime rates and other long-term financing costs would turn upward after Labor Day and

the Federal Reserve Board would generally encourage tighter money. In that case there would be increasing competition for some of the funds that supply the mortgage market, and as these became relatively scarcer again this could be reflected in a stiffening of conventional mortgage rates and renewed absences of funds for price-fixed FHA and VA loans. This change, it was suggested, might come at about the turn of the year.

**Fanny May steps in again.** One part of the bundle of contradictions making up the government's housing finance policy (also sometimes called "the mortgage mess") is the Fanny May operation. This

## Mayor "renegotiates" L.A. public housing; highest Florida court bars redevelopment

After a secret trip to Washington to renegotiate Los Angeles' public housing contracts with federal officials, Mayor Fletcher Bowron announced drastic modifications in the bitterly disputed program that a June referendum disapproved and the city council has been endeavoring to scrap.

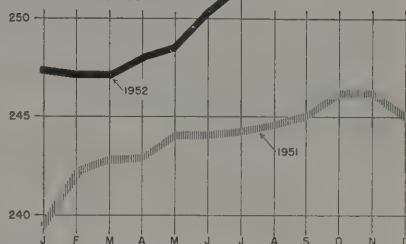
Adding to the grand, court-snarled California mixup the mayor announced revisions in the 10,000 unit, \$110 million program as follows:

- Elimination of all 13-story buildings, for which plans had been prepared by Neutra & Alexander, Allen & Lutz and W. F. Ruck. Three-story limitation on all projects.
- Reduction of total number of units to 7,000, and reduction in total costs to \$83.5 million.
- Abandonment of that portion of the Rose Hill project north of Sinova St., reducing this from 2,000 to 700 units.

**Sunset for Florida projects?** Across the continent in rival Florida there also was disagreement with federal housing operations, but in a calmer mood. The Florida Supreme Court handed down a deci-

## BUILDING COSTS RISE

INDEX: 1926-'29=100



Source: E. H. Boeckh & Associates

**HOUSE BUILDING COSTS CLIMBED** slowly, spurred on mainly by wage increases. Total increase in Boeckh index was small, from 251.1 to 251.8.

takes care of the effects of fictitious, artificially maintained interest rates in the FHA and VA operation by supplying government funds to the market when lenders can't or won't invest in those mortgages at the government's price ceilings.

On Sept. 2 Fanny May resumed the purchase of nondefense housing mortgages. Before adjournment Congress authorized it to spend another \$362 million for this purpose, and with prior funds it has a total of about \$400 million available.

Net result of the new Fanny May purchase program: \$400 million more of government money to be funneled into the FHA and VA market while the FHA and VA continue to say the market's funds are so ample that the 4% and 4¼% ceilings should not be raised.

sion that would block HHFA slum clearance and urban redevelopment projects. The state's highest court ruled that the Daytona Beach Housing Authority violated the state constitution when it condemned privately owned lands so they could be cleared of slums and then resold to other private purchasers for new uses.

Biggest of a number of projected redevelopment jobs throughout the state that will be hit by the decision is clearance of the dilapidated 90-acre Central Negro District in Miami.

**Switch to Baltimore plan.** Miami City commissioners, who may have had an inkling of the coming ruling, voted one week earlier to create a new department of slum clearance.

They also tentatively offered the job of heading the department to G. Yates Cook, chief of the Baltimore Bureau of Housing, who has won national recognition by the job he has done with the "Baltimore Plan" for slum clearance.





**SAFE FROM FLOOD WATERS** these Highland Crest houses being erected by the Winn-Rau Corp. are only one mile from the Armourdale section of

Kansas City, Kan. that was ravaged by the swollen Kaw (Kansas) river in July '51. But these units for flood victims are 300' above river level.

## Builders erecting 1,300 "floodie" houses for river victims; \$7,000 each—no cash

Safe, high-ground, permanent new housing for 1951 flood victims around Kansas City, Kan., has taken a year to materialize in volume. But builders report that local rules and regulations were greater causes of delay than FHA or other federal agencies.

With all emergency confusions and routine obstacles finally resolved, the area this summer has seen construction of 1,300 two-bedroom FHA-insured "floodie" homes that are sold to official "disaster" victims for \$7,000 each with no down payments and 25-year mortgages.

**Homebuilder initiative.** Leadership in flood rehousing in this area was taken by the Home Builders Association of greater Kansas City, which was prepared to erect a large colony of "floodies" itself on a non-profit basis if individual builders had failed to produce such structures. As a preliminary the association located and obtained an option on a high, level 200-acre tract of farmland, but immediately two builders applied for portions of it for private competitive construction.

Building on this Highland Crest site that was assembled by the association are the Winn-Rau Corp. (initially 500 units for flood victims), and Donald H. Drummond (21 flat-roof houses with virtually all glass living rooms). Seven other builders have been erecting another 800 "floodies" in other nearby locations.

**Torrent of sales.** Winn-Rau's conventional two-bedroom houses on slab foundations have 700 sq. ft. of living area and sell for \$7,000 completely finished, sodded and landscaped regardless of lot size or location. The sale of 500 in 30 days to flood victims, who require no down pay-

ment under FHA "disaster" rules, has caused this firm to plan another 700 for all takers, flood victims or not. Monthly payments for flood victims are \$59.92, which includes new street and sewer assessments and trash and garbage collection.

The two-bedroom flat top designed by Gair Sloan for Drummond has 870 sq. ft. of living area and costs \$7,000 without interior painting and trim, or \$7,800 completely finished. This builder first planned to build on 21 lots in Mission Township but for lack of a garage the zoning board three times disapproved his plywood exterior dwelling that has a 20' x 13' living room with floor-to-ceiling window at both ends. Meanwhile it received full FHA approval so he arranged to shift his com-

## National Home Week, Sept. 14-21, to show builders' cooperation, merchandising skill

With each successive National Home Week the nation's builders display greater merchandising skill and greater intra-industry cooperation to make the public's house-shopping task easier and pleasanter.

The celebration this month, Sept. 14-21, will be marked by extensive adoption of the "Parade of Homes" idea. This is the system of having all the builders of a community erect their special Home Week models at a central location, so prospective buyers can see them all in one place instead of having to travel far and wide.

Builders in a few cities have held these annual merchandising and publicity "weeks" at separate dates from the nationwide celebration. Thus Fort Worth witnessed a new homes "parade" June 8-15.

mitments to the Highland Crest site in another county.

**Criticisms and refutations.** Several months ago the J. C. Nichols Foundation of Urban Land Institute awarded a \$500 planning essay prize to a college student who depicted the Kansas City flood rehabilitation program as a planless comedy of errors. Main criticism in the essay:

► In Canada, where the Red River of the North went rampaging through Winnipeg a year earlier, the Canadians had established a regional plan for the river basin. A Red River Valley Board was able to handle the rehousing and rehabilitation program there "without destroying local control—without complete domination by the national authorities."

Builders in the area disagreed with these accusations. More often they praised the cooperation and efficiency of FHA, HHFA and VA, and attributed delays to bothersome but "necessary controls" of local agencies.

Houston builders will exhibit their wares in this manner Nov. 2-9; Miami, Nov. 23-30.

Cities scheduled to have their big parades Sept. 14-21, however, will include San Antonio and Dallas, Tex., Minneapolis, Milwaukee, Portland, Ore., Columbus, Richmond, Little Rock, Davenport and Madison.

The American Gas Association and Lumber Dealers Association are Home Week co-sponsors with NAHB. And this year at least one manufacturer has hopped on the model-home band wagon in a big way: In Dubuque, Iowa, Carr, Adams & Collier Co. will construct a special model home to demonstrate their cabinets, doors, frames, woodwork.



## AEC hopes HHFA will handle Ohio plant housing; relocatable units to be favored

Tired of housing problems and anxious to avoid building more government towns such as Oak Ridge, Tenn. and Richland, Wash., the Atomic Energy Commission hopes to dump most of the shelter headaches at its giant new Ohio River plant into the lap of HHFA. It has already started checking with Administrator Foley to learn how much it might be able to lean on Title III of the Defense Housing Act—a federally owned and operated temporary housing program.

Crux of the Portsmouth-Pike County problem will be to provide shelter for migrant workers. Present estimates are that not more than 10,000 men will be brought in from the outside to build the mammoth plant. The other 25,000 to be needed at the peak of building operations can probably be recruited locally and will require no additional lodgings.

**Trailers face sidetracking.** Present HHFA thinking is that relocatable houses will be ideal for construction workers with families—much more desirable than trailers. After they are no longer needed at the Ohio River installation they can be shipped to other localities for the completion of their amortization.

As for permanent housing for AEC employees who will staff the completed plant, official brows are not particularly clouded. No trouble is anticipated in inducing private builders to provide about 1,500 required units under Title IX.

Miscalculation of local housing absorption and an embarrassing rent control mix-up combined to put the AEC in the red on its contracts for privately supplied temporary housing at its Savannah River H-Bomb project. Even so, the agency declares, it fared better than if it had constructed another government town.

**ORS revises AEC figures.** Here's what happened. Back in the summer of 1950, before the Defense Housing Act was passed, AEC tried to avoid direct federal construction by agreeing to underwrite the rents for trailers and dormitories. Contracts were let for 4,000 trailers and 7,500 dormitory beds for single workers, although the dormitory contract was later cut back to 4,500 beds because workers were finding quarters elsewhere.

The AEC contract guaranteed the John A. Robbins Co. 90% occupancy of the 4,000 trailers for four years at \$82.50 a month per unit. But then the Office of Rent Stabilization moved in under its critical de-

fense housing area powers and rolled back the trailer rents to \$60 a month, leaving AEC to make up the difference to Robbins for the remaining three years of the contract.

On dormitories rent guarantees to Lyles

## Coogan will urge Wherry act extension with authority to build outside of bases

After eight months duty as the Defense Department's housing trouble shooter, burly, energetic Thomas P. Coogan has come to some important conclusions.

He thinks, for one thing, that the way would be paved for solving the family housing problem at many military posts if the armed services would be less conservative in classifying bases as permanent. Once an installation receives that rating it becomes eligible for private-enterprise building under Title IX of the Defense Housing Act as well as under the Wherry Act.

Also to be stressed in Coogan's forthcoming report to the Defense Secretary will be the importance of renewing the Wherry Act next June. Currently, most Wherry developments are being built on bases under ground rent contracts. Coogan urges that more thought be given to authorizing off-base projects. This would make it possible to take care of a lot more places where it is difficult to carve out proper locations on the bases.

One of Coogan's greatest contributions

& Lang Construction Co. were \$16.50 a week for a double room, but this was reduced to \$13 a week by ORS. On June 30 all 4,500 units were completed, but only 958 were occupied. This AEC guarantee was for 100% occupancy, but only for two years. In addition to guarantee payments, AEC also has reimbursed the contractor for preliminary expenses incurred on the other 3,000 units that were canceled.

as the department's unsalaried housing director has been his background as a builder and mortgage banker, and his service as an invaluable intermediary between the armed forces, government housing agencies, private builders and mortgage lenders.

Recently he has focused his liaison talents on one of the toughest problems confronting military men—how to meet temporary housing needs at permanent bases. Despite their mobility, trailers leave much to be desired in the way of living comfort. Coogan believes he has found the solution in an idea he is exploring with the PHA.

This would involve using light, movable houses developed during World War II as merely the first step in meeting the additional needs at some of the crowded, longer-established bases. Second step would consist of improvements and expansions.

Thus, if it appeared that the temporary facilities would be required over an extended period, sprucing-up operations would be undertaken; new floors installed, etc.



**TEMPORARY HOUSING** for construction workers at the AEC's Savannah River project include the barracks (at top, photographed during construction) and this trailer city at Barnwell, S. C.





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acceptance  
Easier  
installation**

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\*TRADE MARK REG.

For complete details see: Sweet's Builder's File **6d** PR Sweet's Architect's File **29c** PR or write to

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## THE ARCHITECT MAKES LIFE EASIER FOR THE HOUSEWIFE

Design considerations in specifying equipment for a home fall broadly into two categories—the first naturally has to do with cost, ease of installation and other mechanical problems of construction; the second deals with appearance, utility and functional features of the equipment.

This discussion is concerned with the second category as it relates to recessed lighting fixtures, ventilating fans and recessed electric wall heaters. As examples, the products of Pryne and Company, of Pomona, California, will serve ideally for purposes of illustration. Pryne products are PryLite recessed lights, Blo-Fan electric exhaust ventilators and Glomaster infra-red wall heaters. These appliances have one important feature in common—they are exceptionally easy to clean. This and other features are better explained by the pictures and captions which follow:



A single Pry-Lite provides ample illumination for this dressing room. Added spaciousness and unbroken ceiling add charm and attractiveness.



"Snap-up" fronts make Pry-Lites the easiest-to-clean recessed fixtures available. Whether installed in the ceiling or in a soffit cabinet, as shown here, the fronts merely pull down for dusting or relamping.





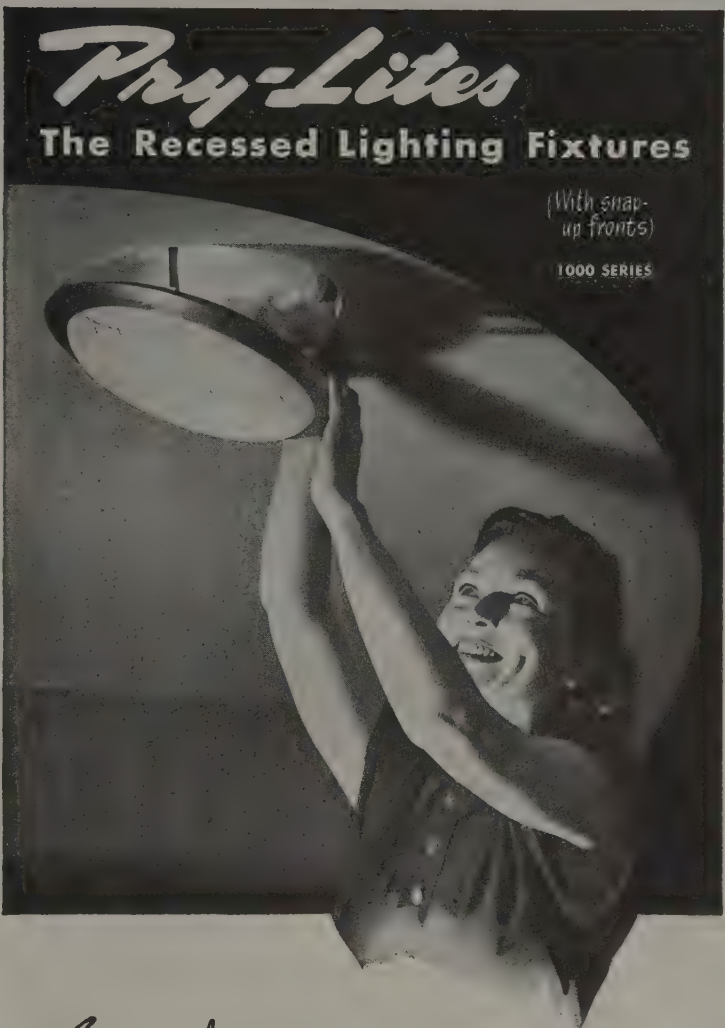
The Glomaster infra-red recessed wall heater radiates penetrating heat from head to toe with absolute safety. There are no flames to ignite towels or clothing.



The attractive Glomaster grille merely snaps out for cleaning. It takes only seconds for this easy chore. There are no bolts or screws to remove.



To clean the Blo-Fan electric exhaust ventilator, you simply loosen one part by hand, and the grille and motor assembly are easily removed. Washing with soap and water cuts all grease off the parts.



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**COMPACT HEATING AND COOLING UNIT**, the entire equipment for summer cooling and dehumidifying, winter heating, and all-year air circulating and cleaning, as installed on the foundation by New Orleans builder Robert F. Morrow to demonstrate that his house is "built around air conditioning."

## Rapid trend to air-conditioned houses puts pressure on designers, producers

Keeping tally on new air-conditioned housing projects across the nation became impossible. Each day brought new announcements—some of projects of 400, 450 and 500 units each.

National Home Week model openings promise a bumper crop of air-conditioned dwellings, and many builders also look to the relaxation of Reg. X by the end of this month to spur sales tremendously. For next year it looks like it may be a race among builders to clinch sales and prevent withering of their operations by offering air conditioning in models priced as low as \$10,000 to \$11,000.

**Quick market thaw.** On the production side manufacturers and designers suddenly faced unprecedented speed-up demands. As Jack Kice, engineer-inventor of the Coleman Co., told Houston homebuilders in August, the industry for years regarded widespread residential air conditioning as a mere possibility somewhere in the future. Then almost overnight came the swelling orders for equipment for new middle- and lower-priced houses, and the industry can scarcely catch up with the demand.

"We've been doing a lot of thinking," said Kice, "but haven't slanted our thoughts far enough toward the residential field. Now we are trying to catch up with you [builders], and we need your cooperation. You want a unit that will not add appreciably to the cost of the house and that will not take up much space. The answer in part is that the greater the production, the lower the unit cost and the greater the sales volume."

Formerly accounting for only 1 to 10% of the air-conditioning market, within ten years the residential field will constitute more than 50% of the market, estimated F. J. Van Poppelen, general manager of GE's air-conditioning division. A Servel spokesman has suggested that installation

of a combination heating and air-conditioning unit while a house is under construction currently runs only \$600 to \$1,000 over the cost of a heating unit alone.

**Full cost absorption?** Meanwhile Carrier Corp., in promoting two special demonstration installations in New Orleans and Kansas City, has claimed that final house costs will be the same or less than for comparable nonconditioned dwellings. This will be accomplished by designing

## Financing key sought for large market: providing old folks with new homes

Persons over 65 constitute an important market for the merchant builder under more favorable financing programs and more thoughtful designing. This was the conclusion reached at Michigan University's fifth annual Conference on Aging, cosponsored this year by HHFA and devoted to housing.

Over-65 population is now 12 million; will reach 16 million by 1960, and 21 million in 1975. Of the present older population 68% own their own homes, a higher percentage than in any other age group. But often these accommodations are in poor condition or no longer suited to their needs.

On one hand most of these owners have large equities that could be converted into down payments on new houses, but about half of them have incomes under \$1,000 a year. Whereas FHA will now insure mortgages only for persons up to 57, a saving-and-loan speaker told the conference his members would make loans to people of 60 to 65 if the security was sound.

**Comforts for all ages.** One of the best suggestions of the conference came from Nate Manilow of Park Forest, Chicago,

these houses around the combination heating and air-conditioning equipment and then achieving mass construction economies by erecting 500 units each, said Carrier. The New Orleans houses are selling from \$18,250 to \$19,300 exclusive of plot, and the Kansas City dwellings are offered from \$16,500 to \$17,500.

Contrasted with glowing accounts of fast, soaring sales when air-conditioned houses were placed on display were two cautionary reports:

► On Long Island LeRoy Newell, of Newell & Daniel, reported "in-between-size" difficulty in getting proper capacity equipment for his firm's larger \$35,900 houses without adding about \$2,500 to the cost. But far from rejecting conditioning, Newell declared it will become as important a part of a house as insulation. "For large houses we must have a unit designed that won't need so much special construction," he added. "I think some of the people who are doing halfway jobs with air conditioning are giving us a black eye."

► In Dallas sales in one \$12,500 project lagged at 30, but according to trade sources this was probably because 1) the house was frame construction, whereas Dallas buyers demand brick-veneer in any houses above \$10,000, 2) a high down payment was a hindrance, 3) the dwelling was of advanced contemporary design, and 4) the combination of so many innovations—design, frame construction and air conditioning—was just too much for the market.

who said his company is building several hundred single and no-bedroom apartments that could rent for \$40-45 per month, plus utilities. They are right near the Park Forest shopping center and not far from churches, two things that rank high in the demands of older people. These units will not be reserved exclusively for older people, because they would also appeal to young couples.

**Face public housing eviction.** In public housing there are no provisions for the aging as such. In fact, public housing is restricted to "low income families," and on the death of one partner, the PHA is forced to ask the survivor to leave. Also, the elderly single person is restricted from entry by this provision. On the state level something can be done, and recently N. Y. State Housing Commissioner Herman Stichman ruled that 5% of all new apartments would be set aside for old folks, either single or couples, in future projects.

An anti-inflation note of possible interest to employers and labor as well as builders was the suggestion that the aged be given pensions partly in the form of guaranteed life rentals instead of money.



## Savings of \$150 per house achieved in cities using National Plumbing Code

Pushing for widespread adoption of the new National Plumbing Code, NAHB says savings as high as \$150 per house in new construction have been made in some cities adopting the modernized standards of this document.\*

The national code contains no requirement for a house trap and fresh-air inlet, but a NAHB check of 80 states and cities found that this "obsolete installation," costing \$25 to \$40, is still mandatory in 14 of the surveyed municipalities. The cost of 4" cast-iron building drain and soil stack over the 3" pipe recommended by the national code is \$25 to \$35 higher for a one-bathroom house. But 72 of the codes NAHB studied required the larger fittings.

**Compare and report.** Research by the codes committee listed 31 of the 80 codes as "antiquated." Twenty-seven were classified "satisfactory," 19 "new, but restrictive," and 20 cities and 1 state (Ohio) were found currently rewriting their plumbing standards.

With plumbing accounting for 11 to 12% of the cost of a new single-family house, NAHB is sending results of its study to all affiliates to stimulate comparison of local ordinances with the national code and thus spur local reforms. Total excess costs from restrictive codes of all types may now be running as high as \$1,000 per house (see editorial p. 108).

**Challenge to others.** Since publication a year ago the national plumbing code has already been adopted outright or with only minor revisions by 41 cities, and has served as a guide for more than 150 other municipalities and states in updating their regulations. Scores of agencies and organizations participated in the long, tedious efforts required to produce the document, and it now stands as a symbol of the progress that is also attainable in other segments of construction.

Many individuals also contributed to successful preparation of this code, but probably none more than Vincent T. Manas, author, illustrator and publisher of the new invaluable supplement, the *National Plumbing Code ILLUSTRATED*.

Engineer-plumbing contractor Manas went to Washington in 1934 to help establish a plumbing and heating section in the Farm Security Administration. Subsequently he was pushed and pulled from

one housing or research agency to another (at present he is in the NPA construction division), but his greatest ambition was always the preparation of a universally accepted national plumbing code.

**War code chairman.** The Bureau of Standards had developed several plumbing codes and manuals from 1923-40. But when the War Production Board sought greater acceptance of the last of these (BMS-66) for wartime material and manpower conservation, it found both management and labor unwilling to use it. To resolve this difficulty Robinson Newcomb, then in Commerce, convened a joint trade committee to prepare an acceptable emergency code, and named Manas chairman.

The harmony he achieved in uniting the two sides behind wartime standards was such that after the war when NHA sought continuation of this joint action directed at a new national plumbing code, the two groups agreed to continue their cooperation, provided Manas continued as chairman.

Eventually the code, for both residential and commercial construction, was completed and issued last year, but Manas felt it had one great drawback—the lack of a set of simple illustrations that would make the formidable technical text easier to fol-



VINCENT T. MANAS

low and greatly reduce the chances for error in its application.

**Not dependent on US.** When he learned that no federal money could be used to print the illustrated manual, Manas decided it was so necessary that he published it himself. Expenses for the 188-page book, which has 184 diagrams, plus 21½ pages of symbols, were about \$5,000, not counting his own time. But in two months sales at \$3 a copy to architects, master plumbers and others by Manas Publications, 4513 Potomac Ave. NW, Washington, have passed the 1,700 mark.

## PEOPLE: Levitt staff move into future town hall; firm sells "Landia" tract and L. I. shopping facilities

Transfer of entire executive staff of Levitt & Sons from Manhasset, L. I. to Levittown, Pa. was effected last month with only **Bill** and **Al Levitt** continuing to operate extensively from official L. I. headquarters. In Bucks County, the future Levittown municipal building is now administrative headquarters for the organization.

Figuring that their new development near the Fairless Steel Works will occupy their full attention for the next three to five years, the Levitts sold their utopian "Landia" tract at Jericho, L. I. in June to Gross-Morton, and in July disposed of most of their Levittown, L. I. shopping centers to Webb & Knapp, who plan for their break-up resale to tenants and investors.

Sale of 646-acre tract to Gross-Morton was reportedly made for about \$3 million with almost half of it in cash. Levitts still hold other L. I. tract, however, including huge potential department-store site where model houses and construction exhibition hall were erected.

Candidate for the Democratic nomination for US Senator from New York this Nov. is **Robert F. Wagner, Jr.**, son of the author of the original federal public housing laws as well as former NYC commissioner of Housing and Buildings and former chairman of the NYC Planning Commission. Wagner would run against Sen. **Irving M. Ives**, R., board chairman of City Title Insurance Co.

**NAMED:** **Ben F. Stormes**, attorney, as executive director of the Home Builders Association of greater Cleveland; **Thomas G. Grace**, who recently resigned as FHA state director for New York as chairman of the board of Lawyers Mortgage and Title Co.; **Joseph T. Lyons**, acting director since the death of **Edward J. Kelly** in May, as director of the Chicago FHA office; **John H. Stelle**, as board chairman of Arketex Ceramic Corporation, and **John A. Stelle**, his son, as president, succeeding his father; **Fred G. Miller**, as treasurer; and **Andrew Hopple** as secretary of NuTone, Inc.

\* Report of the Coordinating Committee for a National Plumbing Code, Dept. of Commerce and HHFA, June, 1951, Government Printing Office, Washington, 50¢



# *New apartments in a typical American City use 838 Dwyer Kitchens.....*



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## MODERN MORTGAGES

*This is the third installment of a regular new feature in HOUSE & HOME—a monthly report on important developments in the modernization of mortgage credit, with particular emphasis on the expanding potential of the package mortgage, the open-end mortgage, and the expandable mortgage.*

Fred Hess & Son



*This month VA's Bert King notes flexibilities of GI loans*

### VA tells how well its guarantees cover package and expandable mortgages

"The VA recognizes that it is a good thing for the home buyer to be able to equip his home without the hardships of an immediate cash outlay or short-term loan, either of which might seriously affect the veteran's ability to meet his home loan payments. We have recognized the need and advantage of permitting the initial 'package' purchase of the home and its necessary appliances. We have also recognized the frequent need for additional advances after the house is bought to cover the cost of additional appliances or to pay for alteration, improvement and modernization of the property. We have, therefore, provided for the so-called package and open-end type of mortgage finance sponsored by HOUSE & HOME."

Thus T. B. (Bert) King, affable director of VA's Loan Guaranty Service, summarizes the liberal and flexible features of its GI home loan program—features which are little known and therefore too little used by the homebuilding industry and the home-owning veteran.

In addition to the well-known straightforward GI loan, Bert King points out that VA offers three important modern variations of its popular home loan guaranty—all available for the asking. Asking for them will make it easier for veterans to buy their houses fully equipped, easier for veterans to get low-cost money to fix up old houses. They will also give lenders better security, offer builders and dealers an expanding market.

VA's three underworked credit tools are:

**1. A VA guaranty for package loans** covering the cost of household equipment and appliances, as well as the house and lot;

**2. A VA guaranty for additional advances** up to the original amount of the loan, which additional advances may be used for improvements, maintenance, or repair, including the replacement of obsolete equipment and appliances;

**3. A VA guaranty for supplemental loans** even beyond the original amount of the mortgage, which supplemental loans may be used to buy additional land, to expand the house or to cover a host of other property improvements—again including the purchase of additional fixtures, equipment and appliances.

In other words, the VA will guarantee any reasonable use of the package mortgage, the open-end mortgage and the expandable mortgage.

#### Package loans

VA is liberal in its rulings on the extent of equipment which may be covered by its guaranteed real estate loans. Its policy states that any heating, air conditioning, refrigerating, cooking or washing equipment, or other appliances making for modern housekeeping convenience, may be included in the package loan. Only two strings are attached: 1) The cost, quality, type, purpose and need of this equipment must be in keeping with the class of home in which it is installed—e.g., no air-conditioning equipment in a \$6,000 house; 2) The lender must obtain a first lien on nonfixture or chattel equipment, such as a free-standing automatic clothes-washer, just as he must obtain a first lien on the realty.

VA is even willing to help veterans meet the difficulties raised by lenders who wish to avoid the expense of recording chattel mortgages on this nonfixture equipment where the particular item is not clearly covered by the lien on the realty. In that case, VA will allow the lender to allocate part of the down payment on the house to cover payment in full for the specific items in question, provided VA is so advised at the time. For example, if a veteran makes a \$500 down payment when buying a house including a \$500 stove and refrigerator which local law would not recognize as part of the realty, the lender could advise VA that \$500 of the down payment was being applied to the cost of this equipment, thereby obviating the need of taking a chattel mortgage on those items. The only restriction would be that imposed by prevailing credit controls.

#### Additional advances

Long after the original GI purchase loan is made, VA still extends the full protection of its guaranty to the lender to advance funds for the purchase of additional equipment or the repair and maintenance of the property. Lenders may make these advances up to the original amount guaranteed by the VA without the VA's prior approval; express provision for this is printed in all standard VA mortgage or trust forms. In addition to maintenance and repair, these additional advances may even be used "for the payment of accrued taxes, special assessments, ground or water rent or premiums on fire and other casualty insurance against loss or damage."

#### Supplemental loans

Less well known but of great significance to all concerned, the VA stands ready any time after the closing of the original loan to guarantee supplemental loans beyond the amount of the original mortgage to cover improvements as well as repairs and maintenance. The term "improvement" applies to both the property and its appurtenances, it covers alteration or expansion of the house and even acquisition of contiguous land. Up to 30% of the supplemental loan may be used for equipment and appliances.

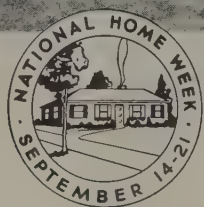
These guaranties beyond the original amount require VA's prior approval of the loan and this approval will be given only to the original lender and only on condition that the veteran has indicated his ability to meet the extra obligation.

Bert King explains the procedure for these supplemental loans this way: "The lender takes a new note for the combined total of the balance due on the prior loan plus the amount advanced on the supplemental loan. The original guaranty certificate is returned to VA, and a new certificate is issued for the same amount of the guaranty outstanding on the prior loan. This new certificate relates to the new sum, but the percentage of the guaranty to the veteran's total obligation, evidenced by the new note, is, of course, reduced." On the other hand, the collateral is increased. The combined loan may be repaid over the remaining term or extended to the full term of the original loan.

In conjunction with supplemental loans, VA has waived certain of its rights in the event of liquidation, with the result that the lender is entitled to be repaid fully on both the original and supplemental loans from the sale of the security before VA is entitled to recoup any of the amount it has paid under guaranty claims.



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## CHEAPER HOUSES OR BETTER VALUES?

Sirs:

The "trickling down" theory (H&H, July '52 editorial) was not invented in Detroit. But the motor-car manufacturers employ it to far better advantage than do the house builders. Detroit has succeeded in convincing people that they should buy a new car every year, or at least every two or three years. The average period of original ownership of a house is obviously much longer—probably near ten years. By the time a house trickles down to a low-income family, it is likely to be half a century or more old and in a sorry state of dilapidation.

Strict enforcement of health and building laws might eliminate the menace that this house offers to society, but would not supply housing for low-income families. Either razing the house or modernizing it equally well removes it from the market for the low-income groups.

The only thing that would really do any good in this bad situation would be a house that would be as good as, or better than, our present \$10,000 house in every respect and could be sold complete with lot for \$5,000. Obviously, such a house could only be produced by some quite revolutionary technique, and most likely on a highly industrialized basis.

Meanwhile, I agree with you that it makes no sense at all to try to produce a lower-cost house by simply leaving out space or equipment. Such houses are likely to be brand new slums. A second- or third-hand house which was originally well designed and well built would offer better living for the price than a new substandard house.

JOHN HANCOCK CALLENDER,  
A.I.A. New York, N. Y.

Sirs:

We strongly favor the idea that low-priced houses should be "used houses" (H&H, July '52). However, most people who buy houses figure that they are entitled to make a profit on them and Regulation X is much to blame. For example, we have been building houses in a subdivision and selling them for \$13,000. About a mile away, we had another subdivision of the same houses minus a few improvements. These houses had been sold on a C. I. basis. Their owners were able to sell them for \$15,000–\$16,000, whereas a buyer could walk into our office and buy a better house for \$13,000. However, on a \$13,000 house, the down payment was approximately \$4,000, with closing costs; while for their part, all that they did was assume a C. I. loan of \$12,500, probably put up \$2,000, and then the seller would carry him on a second.

Also I don't believe in reducing space to build low-priced houses. The fundamental things that go in an 800' house are the same

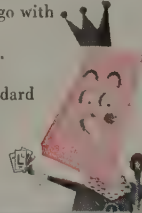
(Continued on page 68)

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It's a coating based on VINYLITE Brand Resins—like those used to cover naval equipment after the war. Properly formulated, sprayed on fiber board, metal, concrete, or stucco, it stretches with structural movement, expands and contracts with temperature change. It's resistant to industrial fumes, oils, salts, and alkalis—stands up under abrasion and weather.

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## LETTERS

as those that go into a 1,100' house—plumbing, wiring, fees, masonry. The only thing that is saved is a little lumber, concrete and flooring. The way to reduce the cost of building, in my opinion, is—1) design houses so that a minimum amount of waste occurs, 2) find an entirely new method of building houses such as Lustron spent millions trying to do.

Finally, there is no business like the home-building business where the substitution of inferior materials pays off less.

JOSEPH L. EICHLER  
Palo Alto, Calif.

Sirs:

Since the automobile is now more important than a house to most people who really need houses, the analogy between them is questionable (H&H, July '52). The auto has taken over in America because the home-builder—public and private—hasn't produced. Poorly housed Americans have escaped from a ghastly physical environment (ghastly relative to our resources and capacity) via the auto, movies, radio, and now television.

We tend to forget that our highway and traffic system constitutes a tremendous subsidy of the automobile industry. Why not subsidize housing in the same way we have the auto? Just as the planning of highways cannot be left to private enterprise, our sprawling, ugly city growth indicates that community planning needs more regulation however we may detest it.

Let the government furnish lots and utilities, and private industry build the house itself all ready to connect to them. An expensive house packed with labor-saving devices in a slum is as poor an investment as a Cadillac on the Sahara!

CARL KOCH, architect  
Cambridge 38, Mass.

Sirs:

My own feeling is that a progressive builder would not consider turning out "Model T" houses (H&H July '52). I have always tried to build reasonable and livable houses. Therefore, I am never able to build the cheapest house in town, but have had good results with a rather low-priced but well-designed small home.

We feel that we can do a better job by building a good house at a moderate price than a cheap house at a cheap price.

W. A. SIMMS  
Dayton, Ohio

Sirs:

In my opinion your July editorial hits the nail on the head. I am convinced that reconditioned old houses should be the reservoir of supply for bottom priced homes; structurally sound old houses can be economically

(Continued on page 70)



# OAK FLOORING IS WANTED BY THOSE BUYING LOW-COST HOMES



Real estate agents are reporting that prospects for low-cost homes will sacrifice many features for "price" but that the majority insist upon oak flooring. Homeowners know that only oak provides those basic features every home needs: durability, economy and "healthfulness."



And now, by laying oak flooring on screeds set in mastic, architects can specify oak and still keep within low-cost building budgets. Using this method of laying oak over concrete slab has proved popular throughout the country and has been approved by FHA.\*



Prospects for low-cost housing are especially aware of the fact that oak is the only flooring that permits them to use any color scheme or style of decorating. All furniture goes well with oak flooring—another reason 85% of all prospective homeowners want oak flooring.

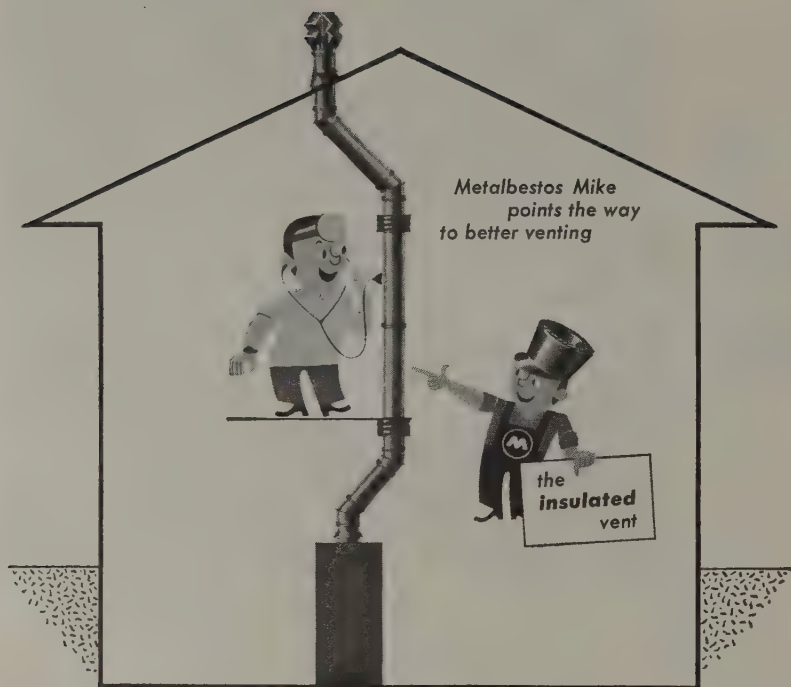


## *Oak flooring is wanted*

**because it is adaptable, durable and economical**

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## LETTERS

renovated and should not be torn down. Why tear down four good walls which were built 20 or 30 years ago, and then build four new walls, no better structurally, but at many times the original cost?

F. MORAN MCCONIHIE  
Randall H. Hagner & Co., Inc.  
Real Estate  
Washington, D. C.

Sirs:

Your editorial (H&H, July '52) is very constructive and thought provoking.

However, I consider it a fundamental error to compare transportation as exemplified by the modern automobile and shelter as represented by present homebuilding techniques and values.

I am not willing to surrender to the idea that our industry should relinquish its attempts to provide low-cost housing so long as such housing meets a fundamental need for a particular class of occupants. It does not seem essentially necessary, nor economical, nor sensible to expect that frills, variations and expanded facilities should be incorporated in all housing built.

Attempts toward providing low-cost housing should be encouraged and intensified. The average builder is a small-volume builder; generally speaking his major market is in the low-priced field. He is directly concerned with economies involved in delivering his product and is generally resentful of criticism when he makes a special effort to provide the housing necessary in his community.

Housing of itself does not create slums but its use and abuse by the human element is the main cause for deterioration such as presently exists in the worst areas of Baltimore and sometimes exists in the most recently built low-cost development.

Leaders in the homebuilding industry should make a national effort to acquaint local government agencies with their responsibilities toward the neighborhoods in their areas and with the effects of inaction if such responsibilities are not brought into practice.

Until the homebuilding industry objectively refutes unwarranted criticism, it will be faced with a continued uphill burden. This could be tremendously offset by a more aggressive demand that local government agencies carry out their responsibilities in terms of maintenance of sanitary and respectable shelter, one of the three essentials of human living.

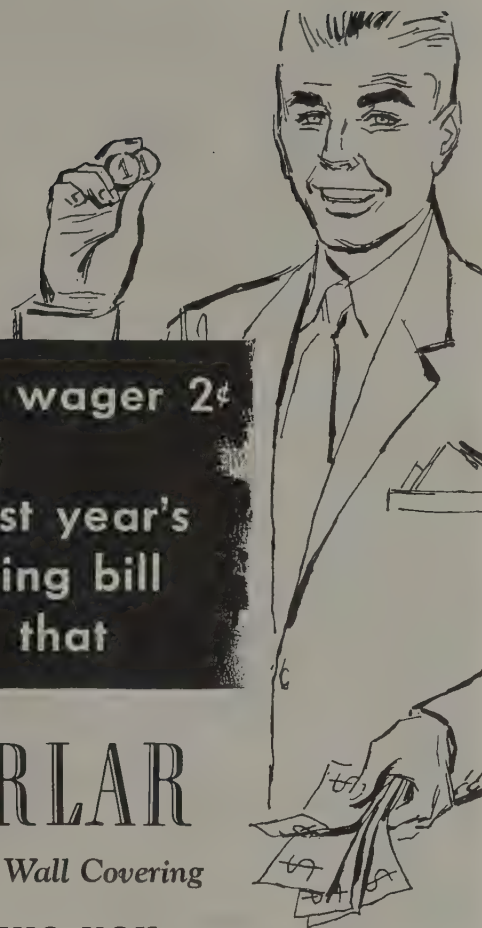
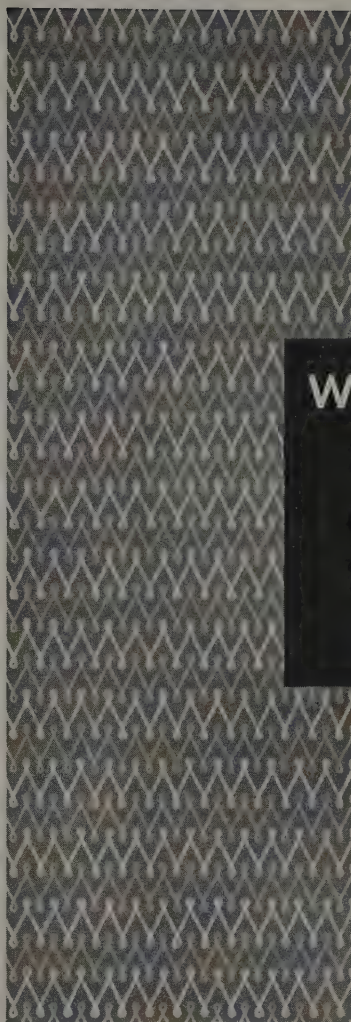
JOSEPH ENTRESS  
Coldwater, N. Y.

Sirs:

I feel very strongly that today's builders sacrifice value in an attempt to turn out "Model T" houses, (H&H, June '52) in many parts of the southwest. This applies particularly to houses below the \$6,000

(Continued on page 72)





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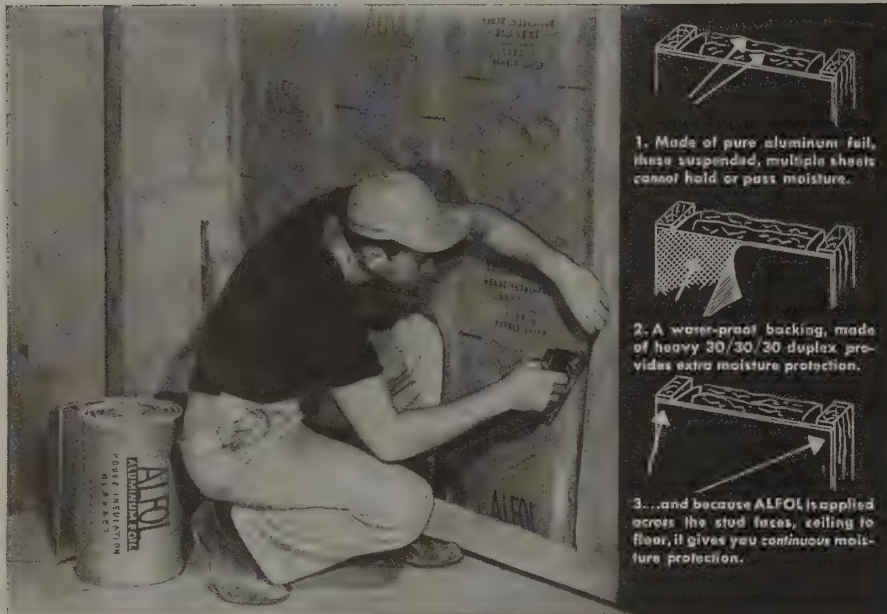
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## LETTERS

bracket. Structurally, the house may be perfectly sound, but the amenities are being sacrificed in an attempt to reduce the cost. A great wave of "semifinished" houses, many of them without plumbing or wiring, has struck our section of the country.

When you get into the \$9,000 to \$11,000 bracket, I do not feel that there is any sacrifice of value on the part of the better builders. I have a 700 sq. ft. pilot house under construction in the highest cost area in Texas. Building it on a \$250 lot I believe I will come out with a total cost, not including any profit, of less than \$3,000. This house will be complete in every detail with a solid slab foundation, frame construction, asbestos siding over asphalt sheathing, 210-lb. composition roofing with the tabs stuck down, full bath with tub, lavatory and commode, job-built cabinets in the kitchen, hot and cold water, gas piped to every room, etc. This is an effort on my part to prove to myself and others that it is possible to provide adequate housing for the Negro at a price he can afford to pay. It should be sold for a maximum of \$3,500 with monthly payments of not more than \$40. In my opinion, value is not sacrificed in this "Model T."

C. ALLEN TRUE  
True & Greene Construction Co., Inc.  
Fort Worth, Texas

Sirs:

It is a shame for good materials to be butchered by poor workmanship which, of course, has the effect of not giving full value (H&H, July '52). By the same token you can shrink the size of the house to a point that it is not as livable as it should be, therefore it doesn't have the value that should be built into it.

I have always felt that the lowest income group should occupy the older houses as indicated by the article.

FRANK ROBERTSON, builder  
San Antonio, Tex.

Sirs:

The filter-down process of providing used automobiles at low cost (H&H, July '52) works well because the time lag is short and the cars are not too obsolete. In the case of houses, the filter-down takes a generation or more, and in many neighborhoods does not work, as property values are held up.

Furthermore, there are not enough houses to provide for our increasingly numerous population. If we are to avoid providing a "free Buick house" because the family cannot afford a "new Chevrolet house," the building industry is going to have to provide improved Model-T houses.

While, under our present unfortunate system of make-work union rules, obsolete building codes and restrictive mortgage loan requirements, it may seem almost impossible to provide good value in the very low cost

(Continued on page 74)



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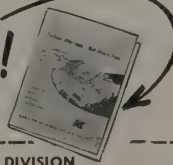
Consult Sweet's Architectural File for complete Robbins & Myers cooling and ventilating data.

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## LETTERS

homes, it would seem to me that the building industry ought to attack these problems rather than let the low-income groups go by default and tell them that they can buy 50-year-old jalopies, if they have to have places to live in.

L. MORGAN YOST, *FAIA, Chairman*  
*AIA Committee on the Merchant Builder*  
*Kenilworth, Ill.*

Sirs:

I agree with you, we have stressed the cheap house too much (H&H, July '52). With homes being purchased on a monthly payment plan, more home value can be purchased for just a small increase in monthly payments.

You have an excellent point in the comparison with the automotive industry. Many homebuilders have been advocating the reconditioning of old houses for the minimum price market, but we have overlooked the comparison. If used automobiles are too valuable to discard, then our used old houses are too valuable and it should be economical to recondition them for the lower priced market.

EARL BUMILLER  
*NAHB*  
*Washington, D. C.*

Sirs:

Congratulations! on your splendid editorial (H&H, July '52). You took the words out of my mouth.

There is no secret in building a house for \$7,000 in this area, but there is a big secret in building a \$7,000 home that anyone can afford to live in.

SUMNER D. HERSEY, *builder-realtor*  
*Natick, Mass.*

Sirs:

I do not agree that to have a cheaper house you have to give up value (H&H, July '52).

In many ways, design can be measured by dollars and cents. Naturally, the greater the number of dollars, the more freedom there is in design and consequent values; nevertheless, I believe that basic values for each dollar spent are there and that the cheaper the house the more the basic value from each dollar becomes. But that value in itself is not to be given up or sacrificed.

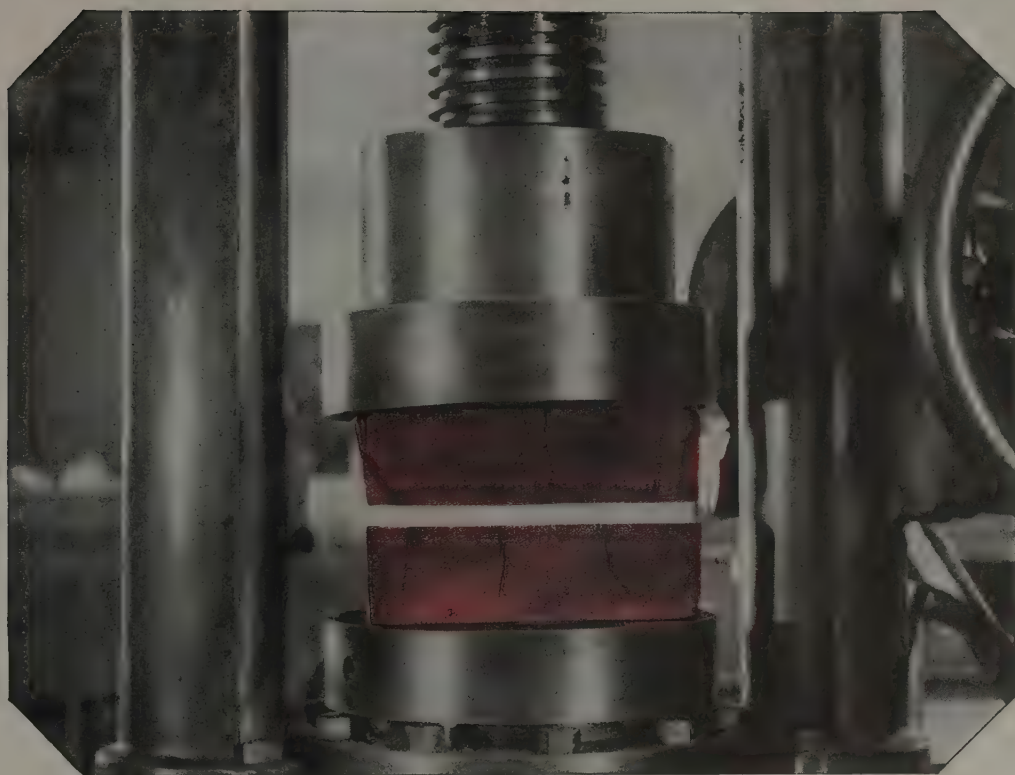
If the \$6,000 house is not always worth building, then it shouldn't be built at all; but that same \$6,000 house should be so designed and every material used so carefully that the same \$6,000 house is more than worthwhile building.

I do not believe that the reconditioned old house should take over the market of the bottom price home. Today's living problems are basically the same for all families, so today's answers should be available to all families.

HENRY HILL  
*San Francisco, Calif.*

(Continued on page 76)





## WHERE STRENGTH IS ESSENTIAL

**T**he strength of a brick wall depends on three important factors: The strength of the brick, the strength of the mortar in the joint, and the strength of the *bond* between the two.

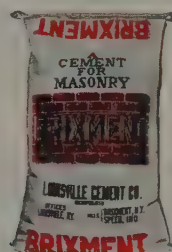
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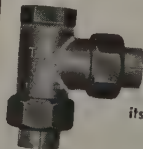
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## LETTERS

Sirs:

Unfortunately, a house, in contrast to an automobile, is connected to the land (H&H, July '52). This points to the necessity of rehabilitating neighborhoods as well as re-conditioning old houses.

Streamlining distribution costs should allow for greater value and lower costs to the owner. Mass builders buying in sufficient quantities direct from manufacturers would obviously lower costs.

Like automakers, homebuilders might find out more about detailed costs and time studies, thus pinpointing unnecessary wastes in labor and material and inefficient methods.

W. D. RIDDLE, *architect*  
Willoughby, Ohio

Sirs:

In our area most builders are sacrificing value to perpetuate the "Model-T" house (H&H July '52).

We believe the propagation of minimum houses on minimum lots in any number is merely perpetuating development of rural slums. Here approximately the same mechanical core goes into an \$8,000-unit as goes into a \$12,000 one. Therefore, is it not better to make this investment in development of a neighborhood of higher standards which will improve with age rather than one which will start depreciating the week the owners take over?

PETER P. HALE, *architect*  
New Haven, Conn.

Sirs:

It is quite certain you can build better value into a \$12,000 house than into a \$7,000 house (H&H, July '52). However, if the public in that class can only afford a \$7,000 house there is no use talking of a \$7,500 or \$8,000 house and quite impossible to talk of a \$12,000 house. I do believe it is a crying shame in many cases to cut off the last \$200 or \$300 of a price because for that \$200 or \$300 many wonderful features may be added. These may be necessities as well as luxuries but the house is so skinned down without them.

Reconditioned older houses can take over the market for bottom-price homes, where these are available. However, you must remember that in tremendous areas of the country all the older houses are occupied to the maximum.

ROYAL BARRY WILLS, *architect*  
Boston 8, Mass.

Sirs:

In my opinion there is no doubt that better value can be built into a medium priced home than in the minimum priced home (H&H, July '52). However, until all of us prevail upon our city governing bodies to enforce the existing laws on health and sanitation and building,

(Continued on page 78)

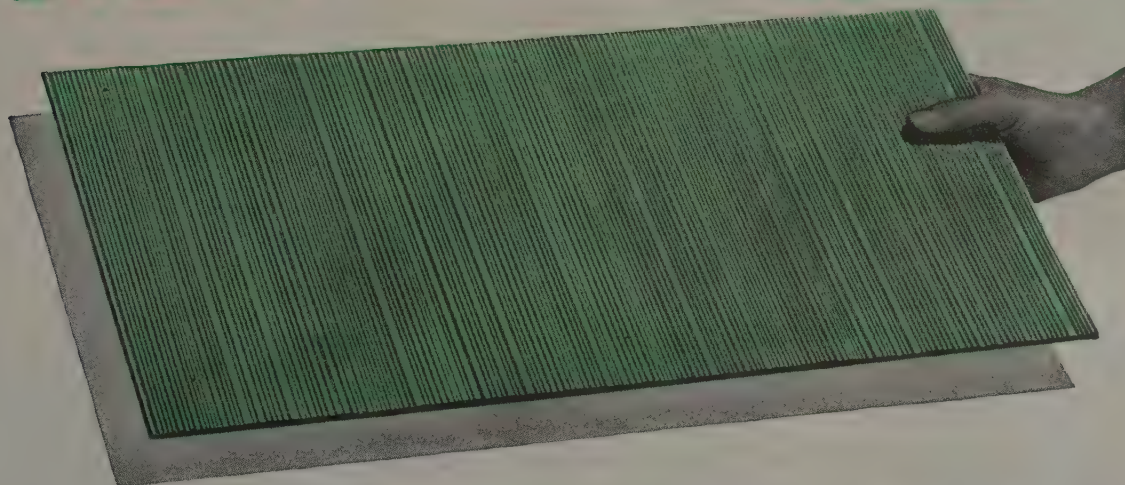




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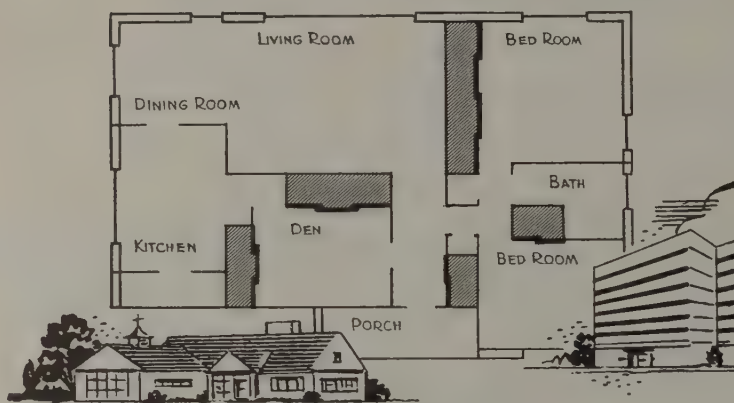
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## LETTERS

the problems of our low-income groups and the slums existing in most of our major cities can never be solved.

HABY SEAY, *homebuilder*  
San Antonio 1, Texas

Sirs:

The perennial comparison between the automobile and the home is misleading (H&H July '52). The value of a house is only partly determined by its shelter performance. *A house is umbilical to land!* An inefficient, crumbly old house in a desirable location has a high value. A well-planned house in good repair in a blighted neighborhood has little value.

SIMON BREINES, *Architect*  
Pomerance & Breines  
New York, N. Y.

## FLAT TOPS

Sirs:

Your magazine fills a definite need in the building industry. But . . . you have one editorial policy I wish to challenge your constant advocacy of the house with the flat roof.

Except for a very few unusual flat-roof designs, what could be more monotonous than house after house with flat roofs? What variety is here? The pitched roof furnishes an opportunity for difference in structural design, color, texture and pattern of roofing materials, a difference precluded by cutting off the dwelling at the ceiling line.

I would challenge any claim that there is an economic advantage to the flat roof as opposed to the pitched roof. It would appear that you fail to take maintenance into consideration when you advocate flatroof design. From the standpoint of "weathering," of structural economy (after computing safety factors for live and dead loads), the problems of insulation and electrical work, of ventilation and especially drainage, only the pitched roof can be considered truly "functional."

Surely the building industry, and your magazine in its respected position as a spokesman and moderator for that industry, are too farsighted to think that obsolescence and rapid depreciation should be the order of the day. We also believe that the cost of maintenance should be part of your program for better building.

C. L. McGEE, *vice president*  
Ludowici-Celadon Co.  
Chicago 1, Ill.

We most certainly do not believe there is any reason why all contemporary houses should have flat roofs. If we had to choose one roof type we would probably favor truss construction with a 4' in 12' pitch, for this economical roof eliminates interior bearing walls and permits complete freedom of interior planning.

But there are many excellent houses with flat roofs, and we do believe it is a mistake to think any one kind of roof—flat, shed, pitched, butterfly, or what have you—has any monopoly on excellence.—Ed.

(Continued on page 148)



# SCR brick<sup>\*</sup> -biggest homebuilding news of the year ...everybody's talking about it...

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### **CHICAGO 1, ILL.**

228 North LaSalle Street... Randolph 6-0578

### **ST. LOUIS 8, MO.**

4117 Lindell Boulevard... Olive 1155

### **AMES, IOWA**

120½ Welch Avenue... Phone 2442

### **COUNCIL BLUFFS, IOWA**

535 East Broadway... Phone 3-8266

### **MINNEAPOLIS 4, MINN.**

402 Wesley Temple Building... Geneva 7055

### **DENVER 4, COLO.**

116 West 10th Avenue... Acoma 6884

### **SAN FRANCISCO 5, CALIF.**

55 New Montgomery Street... Sutter 1-7642

### **SEATTLE 4, WASH.**

204 Central Building... Eliot 6227

Clay Products Association of the Southwest

### **AUSTIN, TEXAS**

Littlefield Building... Phone 6-2647

### **OKLAHOMA CITY, OKLA.**

First National Building... Phone 2-5337

Southern Brick & Tile Manufacturers Association

### **ATLANTA 3, GA.**

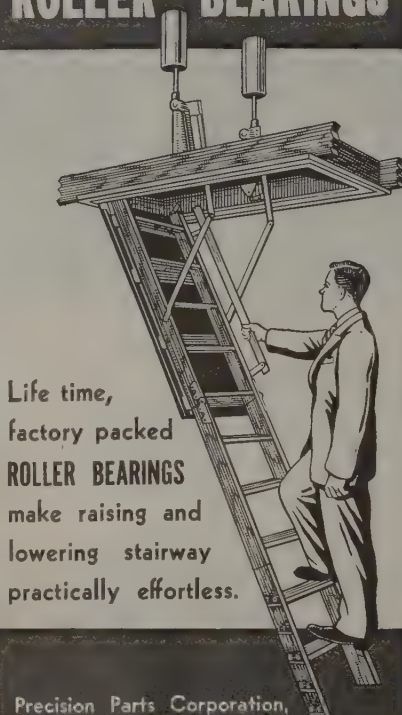
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## BEHIND THE BLUEPRINTS



Architect **FRED BASSETTI**, 35, has focused his design training and output in two cities: Seattle and Boston. A prize-winning graduate of Seattle's University of Washington (1942), he earned his Master of Architecture at Harvard (1946). Similarly, he has worked for several Seattle architects, including Naramore, Bain, Brady & Johanson, and for the Seattle office of the Federal Public Housing Authority as project planner (1942-44). In Boston, Bassetti was chief designer for Alvar Aalto (1946). Bassetti and John M. Morse became partners in January, 1947 in a Seattle practice devoted largely to residential design, from individual custom houses to developments (p. 88) and public-housing projects.



**JOHN M. MORSE**, 41, is a Harvard-trained architect, like his partner, Fred Bassetti. To the partnership Morse brings a diversified background garnered as designer for Harvard architect-professor Walter Bogner (1940); construction supervisor for the C. B. Ross Co., general contractors (1941-42); engineer for Boeing (1943-45); and designer again for Seattle architects Chiarelli & Kirk (1945). In partnership with Fred Bassetti for 5½ years, the two architects have already copped three national awards for distinguished residential design (p. 97). Curiously enough, Morse taught school in Loomis, Mass. after receiving his A.B. from Harvard in 1934, abandoned that career after three years to study architecture.



**JOHN RIDLEY** graduated from the University of Toronto's School of Architecture in 1937, subsequently spent two and a half years working in England and Sweden, simultaneously studying contemporary design all over Europe. His return trip brought him to New York for two years, and in 1942 he was lured to the West Coast. In 1947 after a year's partnership—Olsen, Ridley & Olsen—he established his own Seattle office, running a solo practice for four years. In May, 1951 a new firm was formed—Chapin, Johnson, Ridley—to provide integrated design service including structural engineering, interior design and landscape architecture, supplied by specialists in each of these fields. Product of this comprehensive approach is the builder house for Al Balch in Seattle (p. 94).



Architect **HENRY L. BLATNER**, 40, is a Bachelor of Architecture from the University of Pennsylvania, vintage 1934, and a Master of Architecture from MIT, class of 1935. Blatner worked for several Albany, N. Y. architects, then practiced with a partner as Blatner & van der Bogert for two years before entering the Navy in 1943. In service he was a lieutenant in Special Services, engaged in book layout, graphic presentation and visual education. Since returning to civilian life in December, 1945, he has practiced under his own name. His unself-conscious approach to design has netted upstate New York a bevy of trim, modern houses (p. 131, the Witt house) and a collection of top-notch schools.



**WILLIAM WILSON WURSTER** has had an important influence on modern architecture in America through two media: his architectural office in San Francisco and his academic posts as Dean of the School of Architecture at MIT and now at the University of California at Berkeley. Wurster's inimitable West Coast houses mark him as the "founder of a school of regional architecture which is easily the best the contemporary movement has produced to date." Wurster is 56, and an alumnus of the University of California, where he now guides the design training of the school's fledgling architects. His "crisp, bold, yet unaffected" buildings include not only houses (p. 134), but office buildings, apartments, etc.



Viennese-born **VICTOR GRUEN**, 49, came to the US in 1938, after the *Anschluss* forced him to close his architectural office in the Austrian capital. So well has Gruen adapted himself to the American scene that he is now one of the country's leading merchandising design specialists, with a string of four offices from coast to coast (New York, Detroit, Los Angeles, San Francisco). His organization turns out small shops, huge department stores and combinations of the two in shopping centers similar to the one featured this month in Wichita, Kan. (p. 140). Gruen's organization prepares elaborate merchandising analyses and traffic studies, uses these as the basis for successful building, interior and fixture design.



# SEATTLE

## Exhibit A of architect-builder collaboration

*Seattle is proving that it pays a merchant builder to use an architect.*

*The Seattle Master Builders' Association is proud that well over half its 130 members engage architects as a matter of course on their speculative projects. Unlike the king-size builders of Long Island's potato fields or the mass merchants of Los Angeles' sprawling plains, most of these builders are small builders—five to 25 house-per-year men. Their experience offers a variety of ideas and special-purpose plans that suggest how the small builder anywhere can compete with the big builder, by serving the clientele the big builder cannot serve: 1) buyers who are too individualistic to take the big-tract product; 2) buyers who want to live close to town and must buy houses on scattered lots; 3) buyers who want contemporary design at moderate prices; 4) buyers whose land preferences and way of living necessitate conquering tough sites and special weather or view problems, but who cannot afford custom-built prices. (See pp. 96-98.)*

The quality of Seattle's residential architecture is unusually high, constantly improving with fresh ideas. What lifts Seattle so far above average is a high concentration of factors that encourage innovation, individualism:

▶ *Little traditional architecture:* there isn't much Cape Cod around to make bad copies of. Seattle has never been so steeped in style as Colonial New England, the Georgian South or Spanish-born California, and this lack of styles has made a fresh design approach inevitable.

▶ *Spectacular terrain and climate:* green, rolling scenery topped with towering conifers and such magnificent water and mountain views that almost every homebuyer demands a house that takes full advantage of them. And special design problems: more hilly sites than any other metropolitan area in the US, plenty of sea and sky glare, wind and driving rain, long, gray days and brilliant sunshine.

▶ *The stimulus of a university.* Seattle is a big university town, highly literate and appreciative of good design. The University of Washington's School of Architecture encourages its undergraduates to spend their summers working with construction crews, believes 75% take the advice and benefit greatly from this form of "learn-by-doing" internship. Every summer, groups of students pool resources, design and build small homes for sale with their own hands. Most architectural graduates stay on to practice in Seattle, and many know how to work with builders successfully.

▶ *Good existing architecture.* Well-designed custom homes have set the pace and spread design ideas to more and more builder houses. Seattle boasts a high percentage of home ownership, well above the national average.

▶ *A softer, more normal housing market,* a growing housing inventory and stiffer competition, as elsewhere. These have encouraged builders to seek, through architects, an up-to-date product with new sales appeal. Good design has itself become competitive—the more of it that has appeared on the market, the choosier the average Seattle buyer has become.

To this ripe combination, add 1) an extraordinary concentration of some 350 licensed architects competing for clients (Denver, with roughly the







same population, has only 35); 2) a local AIA chapter which sponsors annual custom-house competitions and meets with the builders to iron out mutual problems; 3) a NAHB local which commends architectural services to its members; 4) a comparatively enlightened FHA office largely manned by qualified architects; 5) a good public-relations program: Sunday newspaper features on residential architecture and rotating exhibits of different architects' work at a large downtown department store.

## PITFALLS

The experience of the small Seattle builder shows there are some pitfalls in architect-builder collaboration, that it works best if the builder

- ▶ sticks close to the architect's designs once they have been worked out to the satisfaction of both parties;
- ▶ perseveres long enough to give contemporary design a chance to prove itself;
- ▶ resists the temptation to overprice the product.

Often a builder's first venture into contemporary design scares him off for good, because initially it *can* cost more. If his labor crews are unfamiliar with anything that varies from conventional construction, he may find himself spending more time and payroll money than he has been used to.

This often leads him to *overprice*, either to compensate himself for the first-house struggles he has gone through, or because he feels the novelty of modern design can and should command a higher builder profit. Then if the first house does not sell quickly, he tends to blame its failure on the architect's design, or on the public's reluctance to accept modern—rather than the high price tag he has written.

## Cheaper by the dozen

Seattle homebuilders who have been successful with good contemporary design have learned at least two things about architects:

1. *A good plan is not a luxury. They do not think of an architect's fee as a tacked-on expense, but include it in their original calculations as a basic cost, as essential and inevitable as title insurance, real-estate commissions, taxes, appraisal fees and materials and equipment from window sash to plumbing fixtures.*
2. *Repetition is cheap. The second house built from a plan costs far less than the first, a third house less still. With the first house behind them, construction crews can work faster and more efficiently. (As one Seattle architect puts it, "A builder should be prepared for higher initial construction costs when he goes into contemporary design, and write them off to his own and his workmen's experience.") And on the second and succeeding houses, the fee for the original plans is gradually absorbed as a smaller and smaller cost. Thus a builder can ask lower prices that compete more directly with conventional houses of the same size, has far less trouble selling.*

*Contrast this with the builder who buys a "stock plan." The initial investment appears to be less, say \$25 or \$50, but seldom results in a better looking, more livable house or a better long-term reputation for the builder. And mail-order blueprints rarely provide what a good local architect can: houses tailored to the builder's particular site conditions, prospective customers and pocketbook.*

## What does an architect cost?

The AIA's recommended national standard for any residential work is 10% of contract price including supervision, 7½% without supervision. The Seattle average for merchant-builder work is probably about 5%, plus royalties for each repeat. (For specific working agreements, see captions, left, and following pages.)

In Seattle the smart builder who finds a good architect, works out design with him, then adheres to the plans, elevations and detailing, and refrains from adding afterthoughts during construction. Real sales features, these builders have found, lie in the intrinsic livability of the house, not in misplaced planting boxes, scallops, trellises, balustrades, wagon wheels, dovescotes, barge boards, meaningless patches of brick, stone or tile and scattered splashes of garish colors. Here is where the architect has been able to help, by siting the houses, varying elevations, advising on decoration and color schemes, even offering limited supervision on the first house of a group.

How can an architect save a builder money? Here the Seattle story points to a number of ways:

1. *By moving his houses faster.* An architect may not always be able to give more floor space for the same price, but a good architect can give *better planned* space—space that *looks* bigger than it is, through proper use of glass areas, open ceilings, storage walls and partitions that stop short of the ceiling, flat or low-pitched roofs and horizontal facades that make a house look longer and wider inside and out. And space that *feels* bigger than it is because circulation has been studied and occupants move quickly and easily from one space to the next in their daily routines. Good plan ideas, when properly advertised and explained to prospective buyers, have meant greatly enhanced sales values, customers who stay pleased with the long-term conveniences of their houses and tell other people about it.
2. *By eliminating guesswork and conflicts* during construction. A complete set of architectural drawings, accurate to the last dimension, has led in many cases to faster erection time. By detailing every item and its exact location and giving copies of these blueprints to foremen and subcontractors, builders have eliminated much of the time wasted in figuring out everything on the job, where delays mean higher labor costs. Foundation, plumbing, wiring and roof plans that show exact location of such elements as furnace, ducts, pipes, stairs, etc. reduce the old-fashioned guess-and-fit mistakes—the type of jumble-building that often results in subcontractors falling all over each other moving studs to accommodate piping, moving piping to accommodate wiring, and so on.
3. *By designing simpler, less expensive details.* Big-volume builders who use architects usually have every stud and nail in place and cost accounted for. But in Seattle the architect has been of great help to the medium or small builder too—analyzing comparative prices of materials and equipment, planning for simpler and cheaper door and window details, ceiling construction, economical flat or low-pitched roofs, short plumbing runs, and a hundred other details.

*The houses on these and following pages were selected by HOUSE & HOME as outstanding examples of architect-builder teamwork with the assistance and recommendations of a special committee of the Washington State Chapter, AIA.*

1 Some 80 of architect Benjamin McAdoo's \$7,500 economy houses have been built in Seattle area. Architect's fee: 7%; \$50 per reuse.

2 Street of 12 different \$19,000-\$23,000 homes by architect Roger Gotteland for Edwin Edwards, builder. Fee: \$7 per hr. (about 5% per design) for detailed drawings, site planning, limited supervision.

3 One of several \$16,500 houses by Gugeler Const. Co. Architect's Mithun & Nesland's fee: \$560, incl. limited supervision; \$100 reuse.

4 \$19,500 hillside house by architect Ira Cummings for builder I. K. Strathy. Flat fee was under 5% of contract cost; \$50 per repeat.



# NORWOOD VILLAGE—built by teamwork

SEATTLE

**Two top design firms and a homebuilder give a veterans' co-op venture clean design, good land planning and low costs**

One of the finest architect-designed developments in the Seattle area is Norwood Village. Here is a case in point showing that the best possible housebuilding combination is good design plus skilled merchant building methods.

To the Seattle architectural firms of Chiarelli & Kirk and Bassetti & Morse was given the assignment to design 40-odd houses with individual features, without making each house into a custom job.

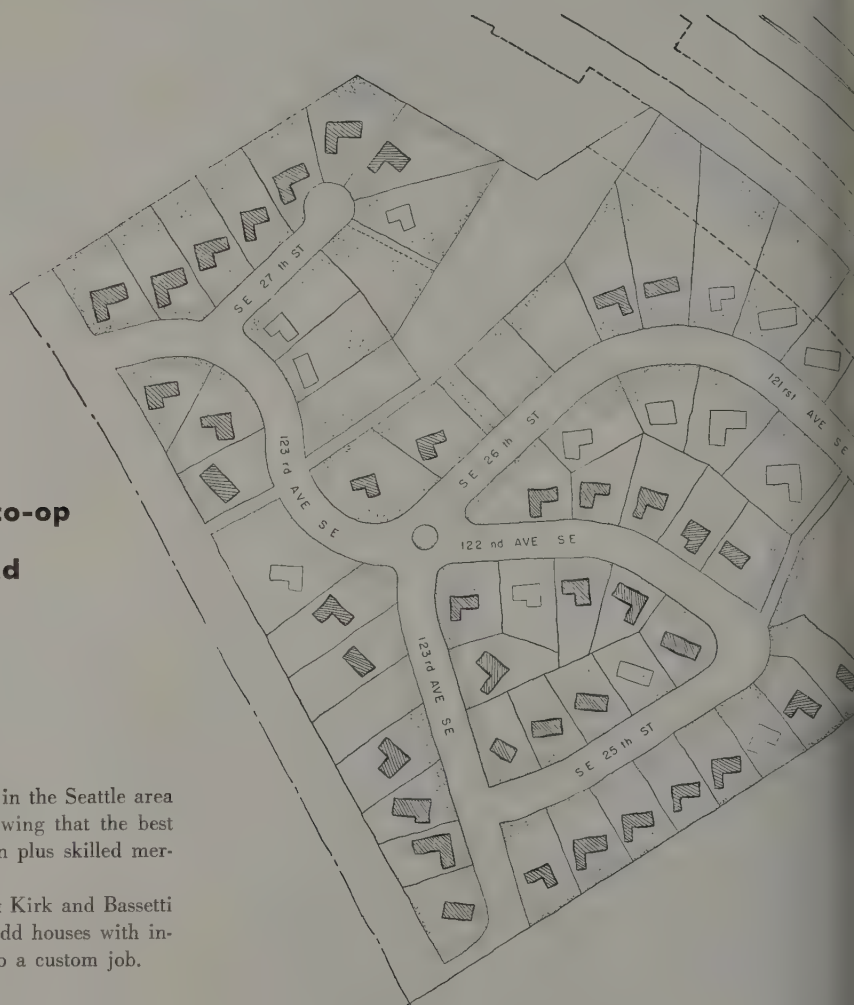
Other requirements:

1. Make the houses fit an awkward, sloping site whose long suit was a breath-taking view of lake and mountains;
2. Keep the costs in the \$10,000-\$14,000 bracket;
3. Provide the simplicity and clean design that would make production building easy and efficient.

## Prizewinner

Norwood Village got even more from the two architectural teams than the usual good Northwest house with its easy, warm use of native wood construction, low sprawling roof lines and wide overhangs, and its excellent fenestration. As an extra, the buyers got crisp elevations and thought-out floor plans that won approval from the Southwest Research Institute. Among the outstanding features of these houses are:

- ▶ Living, dining and kitchen space all facing the view side;
- ▶ Spacious balconies, cantilevered out from the living room and sheltered by overhanging roofs;
- ▶ Built-in storage closets or cabinets in every room in each house;
- ▶ Proper orientation on quarter-acre lots that permits every house to look over and past its neighbors to Lake Washington and the surrounding foothills. (See photograph opposite.)



Entire site overlooks Lake Washington, with Seattle on the far side of the lake. Evergreens and most second-growth trees were saved to reduce landscaping and minimize the "raw" look common in new projects. Though most houses were built with VA loans, FHA subdivision approval was granted this summer.

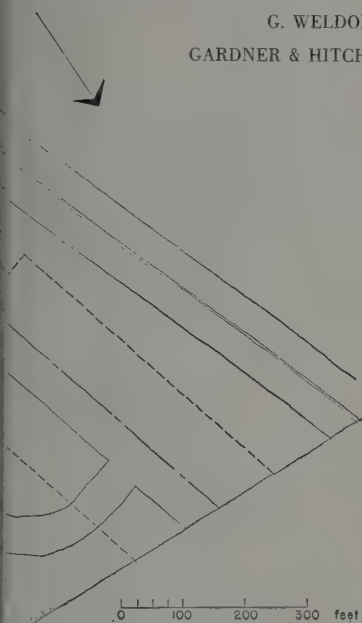


LOCATION: Seattle, Wash.

CHIARELLI & KIRK and BASSETTI & MORSE, architects

G. WELDON GWINN, contractor

GARDNER & HITCHINGS, land planning



*Children's play area is easily supervised from upstairs or down*

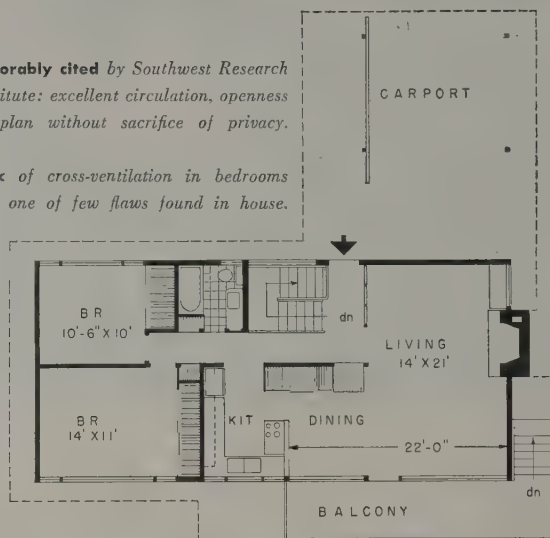
*Photos: Chas. R. Pearson*





**Favorably cited by Southwest Research Institute:** excellent circulation, openness of plan without sacrifice of privacy.

**Lack of cross-ventilation in bedrooms** was one of few flaws found in house.



### The site and improvements

Builder C. Weldon Gwinn was selected by the Veterans Mutual Building Association (owners of the land) to construct the Norwood Village houses. To the site of 30 acres, nine miles from downtown Seattle, a neighbor donated 20 adjacent acres. It was raw land, steeply pitched, and the association members assumed the expense of improving the land, which amounted to \$350 for each site.

To compensate Gwinn for building the houses at a fixed price (contracts were signed two days before Korea), which meant a low profit (\$900) per house, the Association gave him 24 lots in Norwood Village and the 20-acre unplotted section as part of his fee.

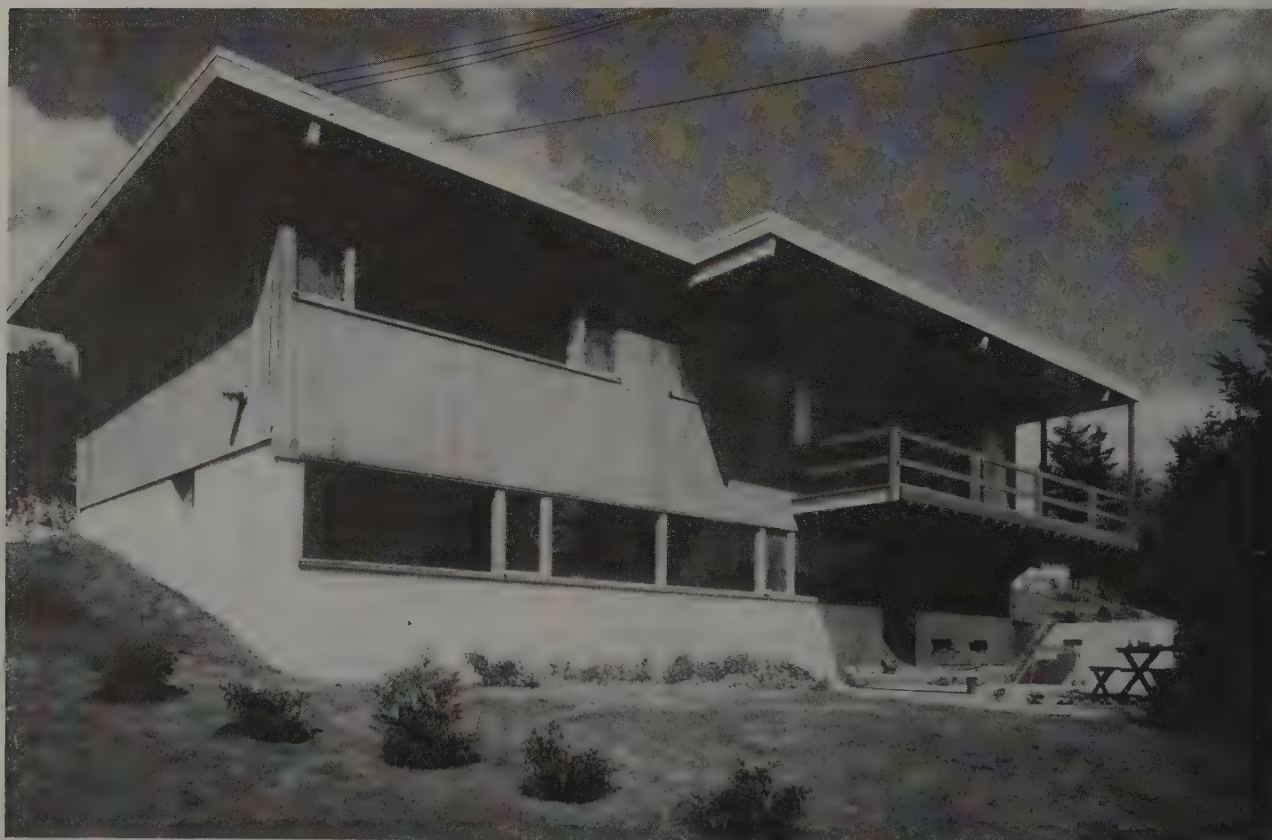
### Too many changes

Gwinn thinks the biggest mistake made by the planners of Norwood Village was the permission granted each buyer to make a large number of changes in the house if he so desired. As a result, Gwinn was never able to "freeze" the design, so each job was a custom job—at a production price. Too often the changes were verbal or informal and the payment left undecided or vague. Basement fireplaces for \$80, roughed-in plumbing for \$120 are examples of details that proved overwhelming to Gwinn.

"Now all changes require a written order and payment in full. With plenty of completed houses for prospects to see, they can include the changes they want in the original contract, which is better for both buyer and builder."

### Don't waste your site

Faced with a sloping site for every house, the architects decided to put it to work by making basements into well-lighted living space through the use of picture windows and doors leading directly into







*Focal point of 14'-6" x 22' living room is Roman brick fireplace. Woodbox beyond matches wall paneling, and its finished top permits use as an end table. Room is separated from entry hall by screen formed from 2 x 2's.*

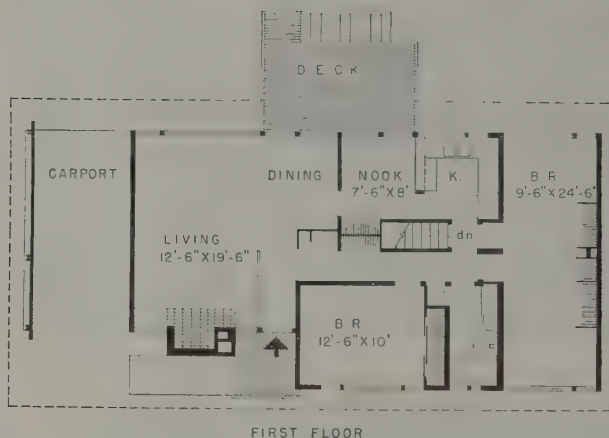


*Built-in cabinets and closets have hardwood sliding doors. Free-standing coat closet adds openness to dining area.*



*Kitchen, like other "daytime" rooms, has handsome view, is divided from dining area by 3'-6" high wall. Project was delayed, and materials shortages developed, because construction contracts were signed just two days before Korea.*





*Slightly pitched roofs proved more popular than flat tops. Builder Gwinn estimates only half of prospects liked roofs without any pitch. Long roof timbers (22') were one of worst bottlenecks, now are cut from specially long logs.*

the garden. Each house is placed on an "island" of cleared land with the remainder of the quarter-acre left in its original wild state of second growth that will require little upkeep. By keeping a firm hand on the bulldozing and land displacement, the architects minimized erosion problems common to rainy Washington State.

In designing the houses and siting them on the lots, the architects made every effort to have the "waking hours" zones face out on the view side. In addition, spacious balconies jut out from the upper floors, sheltering the ground-floor picture windows, and in turn are protected by the wide (up to 6') roof overhang.

So that the houses would be built on the lots for which they were best suited, buyers were given a limited selection of sites, depending on which plan they had chosen. Buyers were not allowed to put just any house on any lot.

#### Future room

The basements are finished in only one of the models, but a perimeter warm-air heat system is laid in the basement slab in addition to the outlets in each room. Laundry facilities, stairway and heating plant are kept to the rear of the basement so that the entire view side may be finished off into additional living space.

Storage and cabinet space, often short in builders' houses, is provided generously. Through an ingenious detail of sliding hard-board doors which run on tracks of round-headed tacks, the architects were able to keep down the cost of this storage space. Cabinets and closets were finished to simulate built-in furniture and serve as dividers between rooms. Woodboxes beside fireplaces are given finished tops to serve as occasional tables. Kitchen counters and shelves are of white-painted plywood, with black hardboard doors, and have metal-lined drawers and vegetable bins.

The perimeter heating will eliminate one drawback of big-scale fenestration—the condensation that plagues most floor-to-ceiling windows. Registers near outside walls will wash a steady current of warm air across the glass to act as a defroster.

#### Teamwork

Norwood Village consists of 50 houses, 34 built for Veterans Mutual Building Assn. and 16 built and sold by Gwinn to others. The value of the architects as the cohesive force in the builder-customer-architect set-up is acknowledged by Gwinn and VMBA. Says Gwinn:

"The architects gave valuable service on this job. They came out at the start of every job and located the houses on the irregular lots and gave us the grade to work to. They also gave on-the-job help in many details. They were of especial value in explaining details to the owners."

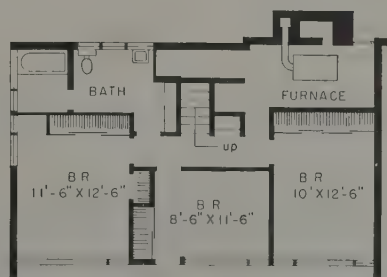
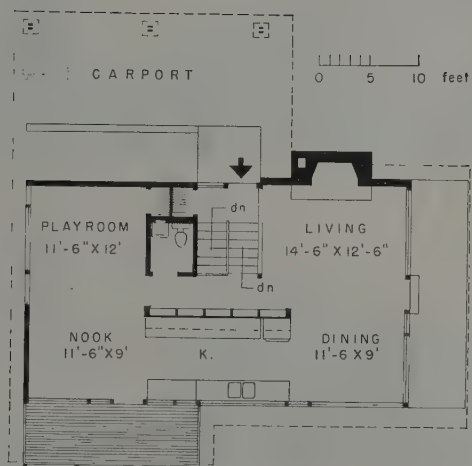
The president of VMBA echoes Gwinn's praise:

"We only regret that the drop from 58 to 34 houses made it impossible to have full-time architectural supervision. The architects in many cases were able to make necessary changes that facilitated the contractor's work."

#### Professional planning, good results

The architects were to have received a 4% fee for their work, predicated on an estimated total building investment of \$1 million, but the reduced program cut the fee to \$14,195, and eliminated a full-time resident supervisor. Later in the program, when the money ran out, the VMBA voted \$1,500 for additional limited supervision time. Each owner's share of the architectural costs was included by the builder in the contract price. By sticking hard and fast to the abilities of trained architects and land planners, by utilizing the skill of a merchant builder, and by capitalizing on the financial advice of experienced mortgage men, Norwood Village has turned a steep, brush-grown hillside into one of the Northwest's outstanding residential communities.





BASEMENT

**Two-bedroom plan was three-to-one favorite** because of large ground-floor space available for future expansion. All carports are on upper level, with entry directly into main living quarters. One house (above) was finished with all bedrooms on lower floor.

# BIG BUILDER

Albert Balch and his architects show 17 years of design progress



Constant experiment and progressively better house designs have paid off for Albert Balch, one of the Northwest's biggest volume homebuilders. His architect-designed houses have not only been among Seattle's best sellers, but they have netted him an officeful of awards and widespread

publicity in local and national press.

Since he first ventured into building in 1935, Balch has authored some 3,500 houses and ten of Seattle's biggest subdivisions under various partnerships. He has engaged a handful of different architects to help him bring out a new house "crop" almost every year.

His first big project, Wedgwood (1941), was the Northwest's first 200-home development and according to national FHA officials the "finest medium-priced community" they had financed up to that time. Subsequent houses (right) illustrate Balch's successful efforts to keep up to date or a little ahead of the field. His philosophy:

"What people were satisfied with last year won't necessarily sell this year. Much more consideration must be given to architectural planning and subdivision engineering.

"Some builders fear architects like they fear a visit to a doctor or a dentist, and they tend to overestimate the cost of architectural service. I think many of them are to blame for trying to get something too cheap—which is the most expensive thing in the world. An architect can save you money, and the best architect is the cheapest in the long run. A builder needs complete plans and details so that carpenters and subcontractors don't waste valuable time figuring out everything on the job, guessing and fitting. Builders seldom pay an architect enough to have all these details planned beforehand. On the other hand, architects often don't know enough themselves about these details and about how a builder operates. And some architects have a tendency to get too far ahead in design, with the public far behind."

Balch has a civil engineer on his payroll to lay out subdivisions on curvilinear contours, plan the lots and then get his architect to site the houses on them. He saves the trees but says it costs him more to build among them. If FHA and VA would give more credit for this type of good site planning and architecture, says Balch, other builders would scramble to put out a better product.

Balch's working agreements with his architects vary. He paid Chiarelli & Kirk \$650, or about 6½%, to develop plans for the \$9,900 house (picture, right center) which won a Revere Quality award in 1949, agreed on \$50 for each repeat. On other houses he has paid his architect double the cost of drawings plus \$25 per house, and for two years had an architect working on his own payroll. Next year Balch plans to build the \$12,000-\$14,000 houses pictured in drawings opposite, has invested several thousand dollars in designs by other architects which are now ready for test.

Balch's prewar houses, of standard suburban style, showed steady improvement.



1949 pilot models won design awards but were too advanced at the time for popular success.

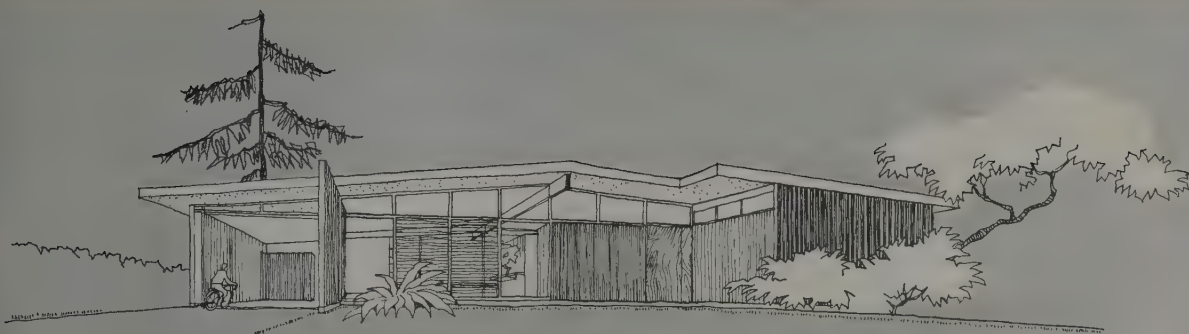


Stock-in-trade for past three years: \$7,200-\$9,500 variation of this basic house by John Ridley, for "Park Ave." tract.

Photos: A. E. Haug; K. S. Brown; Dearborn-Massar; LIFE-Pearson







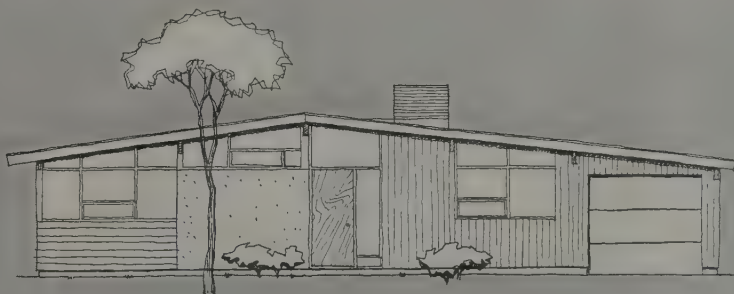
Perspective from street side



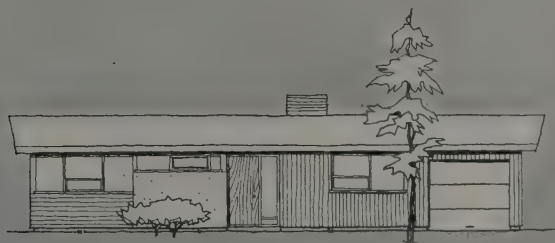
Alternate front elevation

Balch's 1953 houses, next experimental project, were designed by John Ridley, architect for many of Balch's previous homes. "C" type (above, plan left) has 1,060 sq. ft. plus attached garage. Bedroom wing is well cross-ventilated and separate from noise of living areas. Open plan uses workable central service core, "through" living room with front and rear windows. Alternate for hill lots has stairs in core leading to daylight basement.

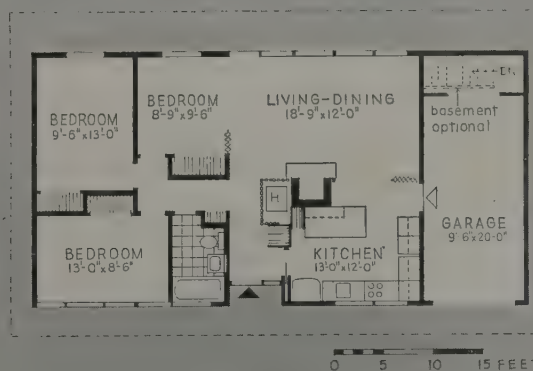
"M" type (at right and below) has three bedrooms, simple rectangular plan of 940 sq. ft. plus garage. Plan features include covered entry, separate front hall, front kitchen convenient to main and garage doors. Core dividing communal space into separate use-areas groups heater and fireplace around same flue. Both living and dining spaces face toward rear of lot where they can get sun and view of private garden. Prices of "C" and "M" houses will be between \$12,000-\$14,000.



Front elevation with gable end toward street



Alternate front elevation



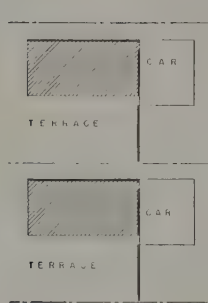
# 6 SPECIAL SOLUTIONS

*These Seattle houses were developed by architects primarily for small builders to answer problems of special markets and special site conditions. But the ideas they incorporate could be adapted by any architect-merchant-builder team as convincing sales features to offer their own market: variety, economy, privacy, outdoor living, orientation for sun, breeze and view; ingenious floor planning; richness and simplicity of line, color and texture.*

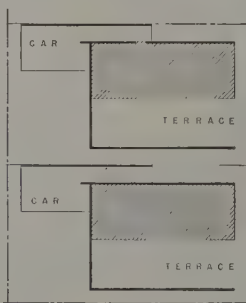
## 1. THE LOT-LENGTH HOUSE—on east or west sides of a street, a builder can offer both privacy and outdoor living on a narrow lot— by placing houses along the north lot line, opening them to a big side yard on the south

These two medium-priced houses were both architect-designed to get the most out of narrow 50' x 100' city lots fronting on north-south streets. Both are easily adaptable to east or west, even north or south sides of a street. In each case they offer:

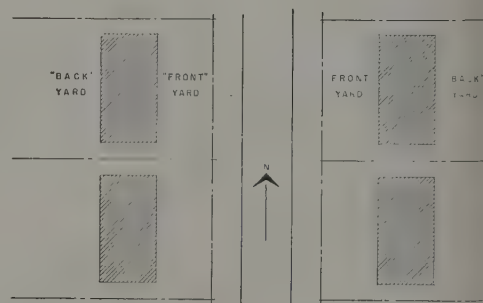
this



or this



instead of this



- ▶ More usable outdoor space: *one big side yard.*
- ▶ More privacy, by using 1) the house itself as a "fence" to shield one side of the yard, 2) an almost windowless wall toward the adjoining house on the north, 3) carport screening house from street, 4) properly placed fences. (These sight and wind barriers indicated by heavy lines in sketch above.)
- ▶ More sun and breeze—both outdoor area and important rooms (living, dining, kitchen, bedroom) face south for winter sun, summer breeze. Length of house shields terrace from north winter winds.
- ▶ Larger-looking lots—houses are farther apart.

- ▶ Less usable outdoor space: two small yards, one front, one rear.
- ▶ Little privacy—unless full fencing is installed, rear yards become one long row of clotheslines and other people's family activity. Living-room "picture windows," often on the front in standard tract houses, see only passing autos. End wall windows look into neighbors' windows.
- ▶ No orientation for breeze in summer, sun in winter.
- ▶ Smaller-looking lots—placed across lot, houses nearly touch each other, give monotonous illusion of row housing.





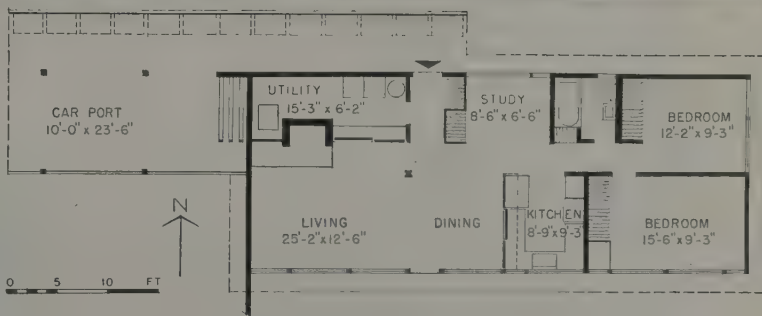
*Whole south side of house—living, dining, kitchen, master bedroom—opens to sun and breeze of big side-yard terrace. High fence, left, screens outdoor area from street.*

PAUL H. KIRK, architect  
WILLIAM R. CROYLE, builder

This side-yard house enclosing approximately 1,000 sq. ft. (plus carport) was designed expressly for speculative sale at \$15,500. Its side entry, protected by a high fence placed directly on the north lot line, means a longer walk to the front door and kitchen, but direct access to all rooms without going through the living room. Important rooms face south to a fenced-in terrace, less important rooms are placed along the north side of the plan with high windows or none at all. The street facade has only a strip of glass under the eaves.

Construction: standard stud walls with sheathing and 1" x 4" T & G siding outside, plasterboard inside. Carport and low-pitched roof are of 2" x 6" T & G lumber, the roof covered with 2" of rigid insulation, tar and gravel roofing.

Architect Kirk worked with builder Croyle on an hourly basis to develop plans, elevations and details, guaranteed that total architect's fee would not exceed 5% of construction cost. At \$7.50 per hr., this fee came to \$390 for the first house without supervision, plus \$50 for each reuse of the design.



*On street side, above, up-front carport shortens driveway paving; lot-line fence shields carport and entry. Siding goes up to high gable window, cutting out thoroughfare and hot west sun, continues as fence, right, for outdoor terrace. Plan relegates secondary rooms to north side.*



*This lot-length house, built on west side of street, has its principal rooms facing south to a big garden patio.*

BASSETTI & MORSE, architects,  
WENDELL H. LOVETT, associate  
EMMETT LARSON, builder

*View from entry, below, shows open plan, exposed beam-plank ceiling.*

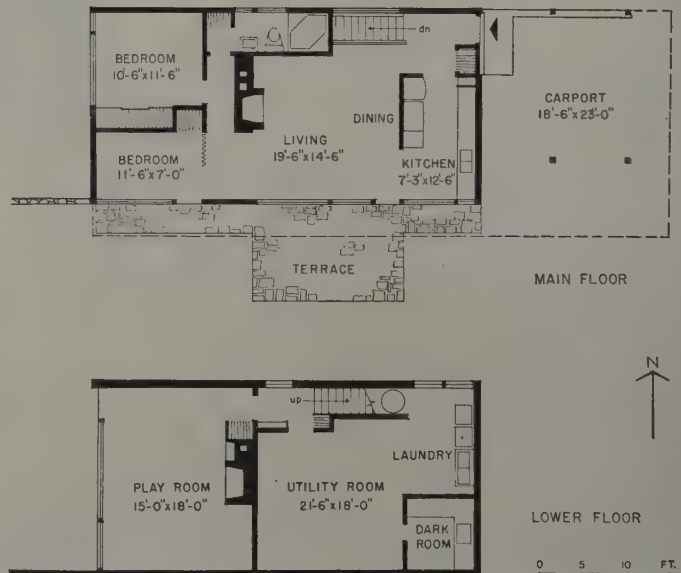


*Modular bays extend to form carport and sheltered entrance on street. Fence at left shields outdoor living area. Sloping site made windowed basement possible (plan, below).*

What this moderately priced house lacks in size (720 sq. ft. of main floor area) it makes up in the extra livability of an open interior plan, generous glass areas that face south to a large private garden. Note its plan features: carport, blank kitchen wall and garden fence for street privacy; only high bathroom windows and a panel of obscure glass lighting the stair well on the neighbor's side to the north; kitchen convenient to entry and car. A folding partition opens to convert the smaller bedroom into a study and increase the apparent size of the living area. On this particular city lot, a 9' drop in grade toward the rear and side allowed a full and windowed basement of 720 sq. ft.

The plan is as long a rectangle as FHA and city setback requirements would permit. Its advantages obviously increase as it is repeated on several lots adjacent to each other, guaranteeing uniform privacy for all. Note to appraisers and local authorities: minimum setback requirements might be relaxed to permit carports closer to streets when there is assurance that several houses of this type are to be built in a row.

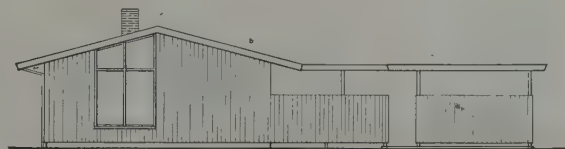
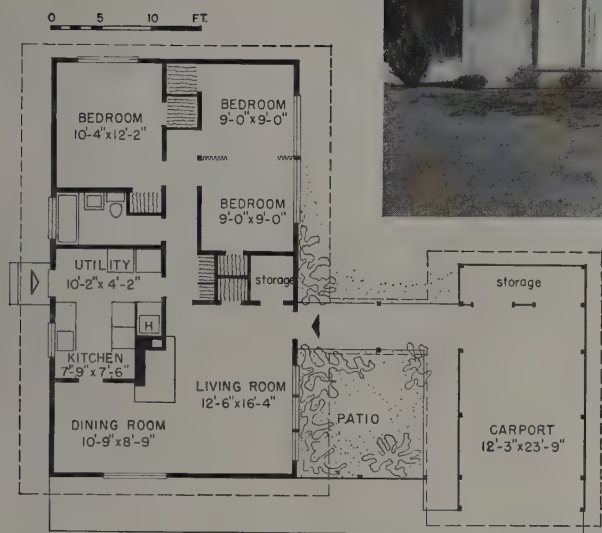
Contracted for \$10,600 (excluding standard architect's fee), this model was planned on a 7'-6" module (increasing to 8' in the two rear bays), built of standard stud frame with siding and plasterboard. The flat roof is of wide-spaced 4" x 14" beams and 2" planks exposed in the ceiling.







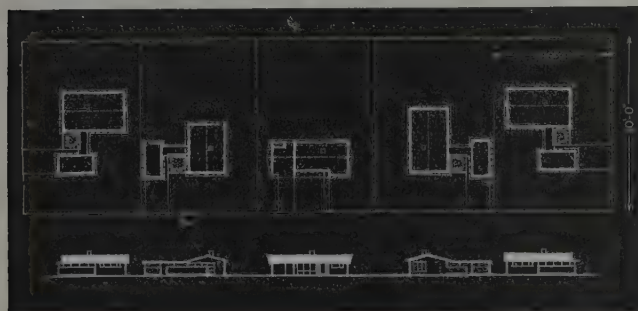
*Separating house and garage allowed sun terrace between. In an effort to "dramatize" outdoor living, builder altered architect's concept (below) with brick wall, barbecue and chimney succeeded only in destroying the design unity of the facade.*



## 2. THE FRONT PATIO HOUSE offers buyers a living room with private sun court instead of a streetside "picture window"

ROBERT L. DURHAM & associates, architects  
HEBB & NARODICK CONSTRUCTION CO., builders

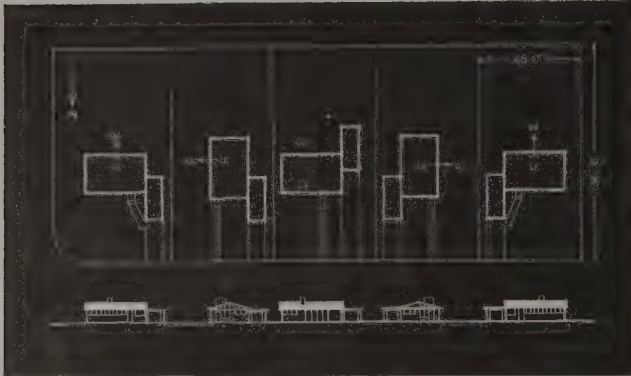
*By reversing plan and changing placement of house on lot, architect achieved genuine variety in street elevations.*



On the *north* (or south) sides of a street, a builder can provide a south-facing outdoor area behind a street fence, and a living room that doesn't have to face the street to get south sun and breeze. These five \$13,500 homes show how the architect gave the builder a variety of street elevations by turning and reversing a basic plan. In all but one, the garage was arranged at a distance of 16' or more from the house and the open space fenced across to provide a sheltered area for outdoor living. Living rooms face their glass walls *away* from the street and onto this private terrace.

Architect Durham received \$150 per house for drawings, some detailing, no supervision. Royalties will be \$75 per house if the designs are used in a volume project.

### 3. THE VARIABLE HOUSE: five different houses from the same plan



*One plan, pivoted and reversed: five houses. Outdoor living areas ("o.l.") face south; all but one are directly off living rooms ("l.r.").*

ARNOLD G. GANGNES, architect  
BUCKLEY B. ARENSBERG, builder

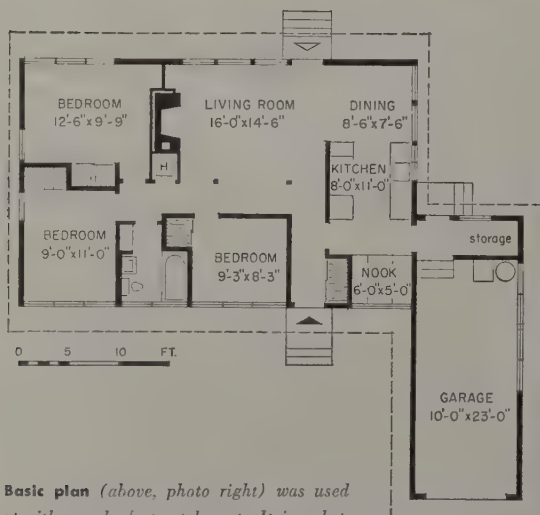
In sharp contrast with drab, straight rows of homes identical in both plan and facade, these houses present five different faces to the street. Yet all have the same floor plan, with minor variations in the placement of the front door.

In effect, this has meant to the builder five plans for the price of one. Rather than buy a stock plan and attempt to dress it up with a variety of exterior *ornamentation*, builder Arensberg asked architect Gangnes to develop a basic plan flexible enough to permit a variety of *placement* on the lot. Further, he retained the architect to draw up each of the five alternates and site them properly along the street.

For development of the first \$11,500 house (36 are planned in the subdivision), the architect's fee amounted to \$500 at a \$7.50 hourly rate. Charge for the four variations: \$25 each, plus drafting time.

The architect saved the builder money by 1) complete and clearly drawn plans which permitted crews to work faster, 2) simpler, cheaper window detailing, 3) open ceilings that follow the roof slope, eliminate the added labor and material of furred-down flat ceilings.

*One variation (second from left in street layout above) places dining-kitchen end toward street, rearranges garage. Basic plan's rear door becomes main entry.*



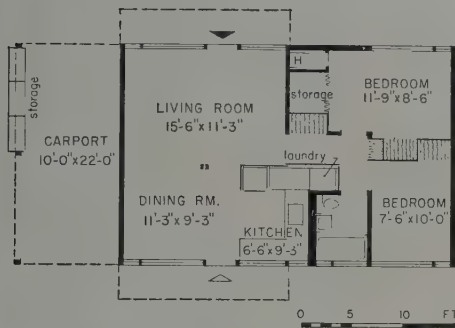
**Basic plan** (above, photo right) was used at either end of street layout. It is a better floor plan than its variations, has separate entry hall, garage access and hidden service entry linked to kitchen under cover, living-dining areas facing directly south on a private garden at the rear.



*Another variation (middle lot on street) reverses basic plan for buyer who likes front living room. Garage moves back to free dining-kitchen windows.*







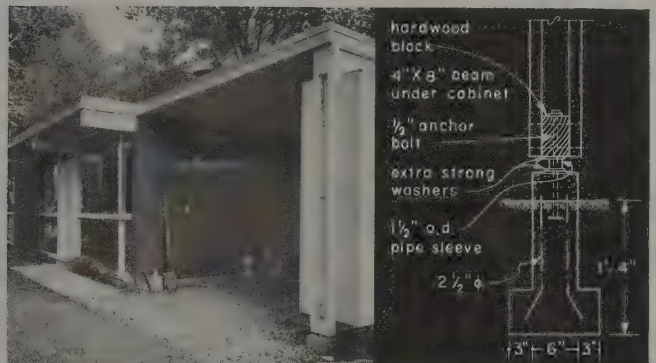
Reversible plan permits main entry on kitchen (above) or living room sides

## 4. THE LOW-COST HOUSE sells to a large special market: young and moderate-income families

BASSETTI & MORSE, architects  
THEO. CALDWELL, builder

Among the most advanced, low-cost builders' houses in the Seattle area is this compact (704 sq. ft. plus carport) pilot model which sold recently for \$8,500, including improved lot, range, clothes washer and dryer, table-top hot-water heater, freestanding fireplace. Builder Caldwell is breaking ground for more houses of the same type in both two- and three-bedroom versions. Architect's fee: 7½% of contract price of first house for developing plans, elevations and details; \$35 royalty for each repeat.

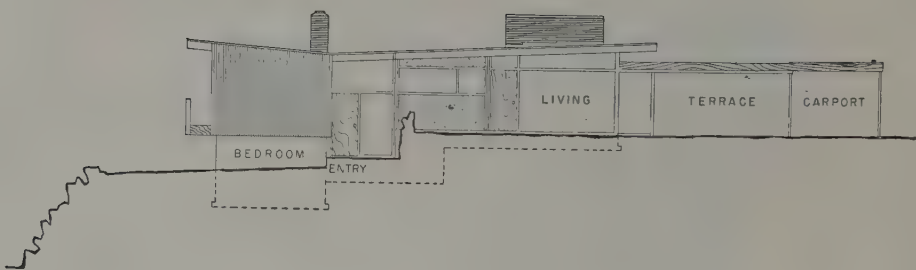
The plan is reversible, so that either kitchen or living area faces the street. Other design highlights: the roof is carried on the end walls (which are windowless for privacy) and on three 4" x 10" ceiling beams, 8' o.c., which are left exposed to view. The 22" span is supported near the center by the interior partitions and in the living room by a double 2" x 4" post. Construction economies: A flat roof and modular planning on 8' bays meant simpler framing—and could mean far less labor costs on a group of houses once construction crews became used to it. Since much of the structure is exposed, however, careful workmanship, constant alignment of wall and roof members are necessary. Other cost-cutters: a 4" slab floor on gravel instead of joists and crawl space; kitchen and bathroom plumbing set back to back for shorter plumbing runs. Heating: 8" ducts imbedded in the slab radiate out from furnace (in separate bedroom closet) to perimeter registers which give instant warm air under large glass areas. Insulation: 1½" between tar and gravel roof and ceiling of 2" x 6" T & G planks.



Pintle and beam keep carport storage wall off ground, rot- and verminproof

Living room: beam ceiling, cedar-plank and glass walls, \$62 iron fireplace





ARNOLD G. GANGNES, architect  
WILLIAM KIPPLE, builder

## 5. THE PROBLEM-LOT HOUSE

gets an architect's attention to solve a combination of site difficulties

The site which confronted the builders of this house unhappily combined several of the special problems that a small, scattered-lot builder is apt to encounter. First of all, it was

▶ a *narrow* lot (50' x 100'), too small to accommodate most houses, particularly one of the size proposed. And

▶ a *steep* lot, sloping sharply in *two* directions—a 27' rise from the corner at the street intersection to the back corner diagonally opposite. It had the drawbacks of

▶ a *corner* lot: deep, space-consuming setback requirements on *two* sides; and it was

▶ a *poorly oriented* lot; where could one put big windows and an outdoor living area to get view, south sun and summer breeze, and still have privacy?

The architect's solution shows how each of these problems can be solved. The long axis of the house is parallel to the lot's long dimension to use the limited site space to full advantage. Foundation walls (*see elevation above*) ride down the natural slope in three steps rather than digging deeply and expensively into the hillside. Basement space is logically near the lowest corner of the lot where it requires least excavation, and where it can get natural lighting above grade for use as a playroom or workshop. This put the bedrooms above on the same level as the rest of the main floor *and* high enough above to get both privacy and a desirable west view over the rooftops opposite.

A partially covered outdoor sitting area (an owner's requirement in this custom-designed house) was provided on the only level, high-and-dry place on the lot, and shielded by the house on one side, carport on the neighbors' side, retaining wall and fence in back. This terrace is open to south sun and breeze, has no fence in front since it is set back and higher than the lightly traveled side street. (With a fence, it would be like the "front-patio" scheme on p. 99.)

Cost data: contract price of \$19,950 (excl. 10% architect's fee) includes \$1,700 in sitework. Main floor area is 1,230 sq. ft. plus 500 sq. ft. basement area, covered terrace and carport.

*Window-washer's catwalk shields bedrooms from street, accents horizontality*

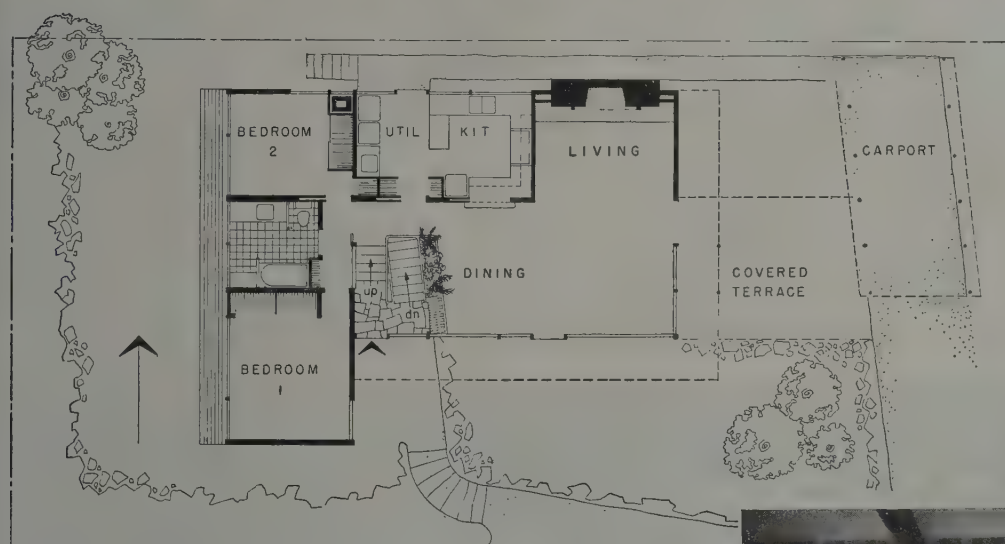


Photos: Charles R. Pearson

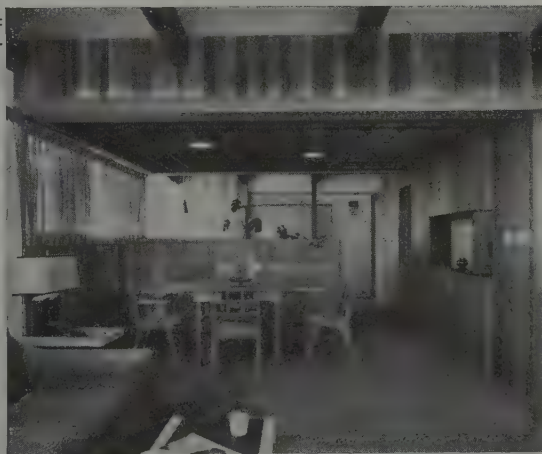




*Logical butterfly roof results from high living room, right, low center hall, two story bedroom wing with view.*



0 5 10 15 feet



*Spaciousness through open planning (above): view from living to dining area, over stairwell to bedroom hall. Low ceiling, lights, cedar paneling recapture intimate mood.*

## 6. THE HILLSIDE HOUSE achieves privacy, view and outdoor living on a steep site—with a “service core” plan, post-and-beam framing

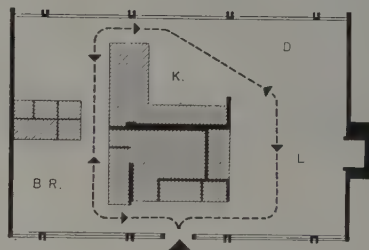
This \$13,000 house, which won the 1952 Northwest AIA award, \$20,000-and-under category, was designed by architect Paul Kirk for his builder brother Blair to erect on speculation. To other builders and architects working with hilly land, it is chiefly interesting for its

**Good placement on a tough site:** instead of burrowing into the hill, it takes off on stilts toward the view, leaving a shelf of land behind it and creating a south exposure for the house. This rear terrace has wood decking for minimum upkeep and high fences for privacy and wind protection.

**Workable central-core plan:** an “island” groups plumbing and storage spaces around a single “wet wall,” leaves the perimeter of the plan free for activity and sleeping areas with full fenestration. Circulation (*see sketch*) hugs this service core, allowing ample “dead” space around the outside walls for furniture placement. To blank out views of neighbors on either side, end walls are windowless; the eye is channeled out through a whole wall of glass to the east water view, or to the rear deck and garden. Light and ventilation for the inside bath and inner side of the kitchen are provided by a large skylight. Note: the bathroom door is the only door actually necessary in a house of this plan type.

**Expandability:** the 814 sq. ft. of enclosed space on the main level is supplemented by 420 sq. ft. of basement below for storage, laundry and furnace. By cutting a stair into the floor of the general-purpose room above, owners can eventually expand downward and sheathe in the exposed posts to form additional bedrooms.

PAUL HAYDEN KIRK, architect  
BLAIR KIRK, builder



*Core-type floor plan (diagram above) works like three concentric rings: innermost masses closets, cabinets, kitchen and bathroom fixtures (on one stack); next ring is circulation path; outermost is free for windows, furniture.*

Photos: Dearborn-Massar,



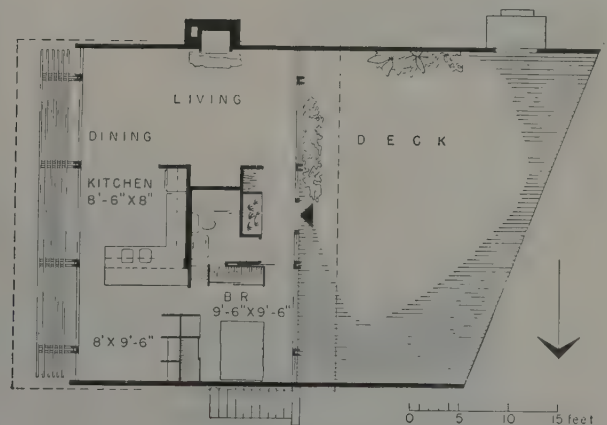




*East elevation has glass wall for main lake view and morning sun, wide overhang to reduce sky glare and hot noontday rays, catwalk for window washing. Gray-white panels below windows are of cement asbestos board.*



*Steps lead up from street to courtyard entrance on south side (left). Siding is 1" x 4" T & G clear fir, chimney of concrete block. Both south and north sides, facing neighboring houses, are windowless for privacy. Enclosed basement serves as bulk storage space and furnace location for warm air system. Open space under the house can be sheathed in later to create three more bedrooms.*





*Gravel bed under raised wood deck safely carries off hillside rain water*

*Lighted showcase dramatizes main entry from deck side. Right: living room*

**Clean construction**—four 4" x 4"s 9' or 10' apart (each bracketed with 2" x 6" strongbacks to form wood H-columns) support double 2" x 12" floor beams (topped crosswise with a floor of 2" x 6" joists) and continue up to support 4" x 10" roof beams (4" x 14" over the living room to carry a longer clear span). This simple and effective system is exposed to view as a structural pattern (*see photo p. 105*). Unity of design and warmth of texture were achieved by using cedar or fir planking, 1" x 4" or 2" x 6" T&G, for virtually *all* surfaces inside and out: ceilings, walls, fences, decking. For a dark, mellow finish, wood surfaces were stained and burned with ferrous chloride.





*Fir walls, ceilings lend warmth to interiors. Raised hearth is of sandstone.*



*Wide-spaced 4" x 14" beams carry clear span over living room. Low rails across floor-to-ceiling glass are wise safety measure, if mainly psychological, do not interfere with view of private sun deck and garden beyond.*



*Master bedroom has its own deck view. The double bed is suspended near the foot "for sweeping underneath."*

*L-shaped kitchen has long plastic skylight, is separated from general purpose room by free-standing counter, center.*



*Bedroom side of service core has built-in drawers and a wardrobe with sliding doors of pressed fiberboard.*



# Does code Babel add \$1,000 to small house building cost?

*The most expensive thing about today's house is not the tiled bath with its smart pullman lavatory. It is not the labor-saving dishwasher, clothes washer, garbage disposer and automatic range, or even the air-conditioning compressor that permits a completely new standard of year-round comfort.*

The most expensive thing about today's house is the local building code under which it has to be erected, with its countless unpredictable and often senseless variances from sound national standards. These variances cost the homebuyer (and the homebuilder) a lot more than it would cost to make all the living rooms and all the bedrooms 20% larger—more than wall-to-wall carpeting, more than complete insulation and double glazing, more than an extra bathroom.

And these variances are completely useless. They contribute nothing to the safety of the house or the health and happiness of the family beyond what could be assured by one of the standard codes, for all the standard codes make provision for meeting local climatic conditions.

**These variances probably add a good \$1,000—or a bad \$1,000 if you like—to the cost of a small house**

Now that extra \$1,000 is not just the sum of all the little wastes which are forced upon the homebuilder by most local codes—a few dollars for a useless house trap, a few dollars for 100% extra weight of plumbing beyond what makes sense, a few dollars for making the vent too tall for economical flashing, a few dollars for metallic armor around the electric light wires when nonmetallic cable would do just as well, a few dollars for ceiling lights in rooms where ceiling lights are out of fashion, a few dollars for studs spaced on 16" centers when 24" would be more than strong enough, a few dollars for footings under every bearing wall when a floating slab would probably be better.

*The real cost of codes is that their myriad variations always discourage and often forbid the progress of standardization and the development of mass-produced standard parts that could knock the bottom out of many home-building costs.*

Does anyone doubt that, granted one plumbing standard from coast to coast, the plumbing industry could market a standard plumbing assembly whose installation would be a matter of minutes instead of hours? Does anyone doubt that standard bathroom walls predrilled for pipes could be developed to minimize the cost of that most expensive room? Does anyone doubt . . .



What would a small car cost today if the automakers were forbidden to mass produce one single nationwide model, but were forced instead to turn out one model for New York, one model for Yonkers, and a third for Skaneateles?

As long as every city, village and town can dream up its own special requirements and forbid the kind of construction that is perfectly legal in the next community, what hope is there that homebuilding can achieve the economies mass production has brought to every other product the American family uses?

### **There is a barrel full of hypocrisy in the chaos of local codes**

Can anyone say honestly that 2,200 different plumbing codes are necessary to protect our health? Does anyone really believe the local plumber who upholds the local code knows more about health and sanitation than the US Public Health Service and all the experts who wrote the national plumbing code? Is there any purpose to a divergent local plumbing code except to make more local work? The truth is most local codes are rackets, and most of their special provisions would not be upheld by the courts if any builder could afford to challenge them (May '51 issue page 111).

Likewise, can anyone say that the great principle of local rights and local self-government is threatened when a community is asked to accept uniform code standards? Are nationwide standards for plumbing and fire protection any greater menace to our liberties than the nationwide standards for food and drugs which have been accepted for more than a generation? The truth is the special requirements of most local codes are a sort of local tariff to keep out the "imported" products of other than local labor. Such barriers to interstate commerce were forbidden by the founding fathers when they wrote the Constitution, and they have never been defended in even the hottest states' rights debate.

Too often local codes survive because in each community there are people who think they can make more money out of code divergencies than they could make under national standards, and these beneficiaries are willing to fight harder than the codes' victims will fight to throw them off. Too often the victims are afraid to fight. Plumbing manufacturers, for example, hesitate to offend the local plumbers through whom their sales are made. The electrical manufacturers were afraid to get involved when Los Angeles and Milwaukee were fighting for less wasteful electrical requirements.

And the Federal Housing Administration, which could

be exerting a tremendously effective pressure for sound nationwide standards, has elected instead to include in its valuations the cost of whatever the local code requires, however unnecessary it may be. Thus, the more waste the local code requires, the higher the valuation FHA will give to cover those useless costs!

**Since the war great progress has been made in developing uniform standards which most communities can adopt and keep in step with by reference.** The need today is to overcome local obstructionism and get these standards adopted at the local level. Now is the time for all good men to come to the aid of the devoted few who have carried the fight for code coordination to this final stage.

This is a battle in which the American Legion, the Veteran of Foreign Wars and the Veteran Administration should be taking a full share, for most of today's new houses are being sold to veterans, and so veterans end up paying most of the cost. It is a battle in which the women's clubs and the women's magazines should be deeply interested, for the more waste a house requires the less quality it can have, the less labor-saving equipment it can include, the less adequate its space must be—and all this means more work for women and less enjoyment of home for all the family.

**Most of all this is a battle for the organized homebuilders.** The day has passed when they could offset higher costs by getting Congress to fix lower interest rates or insure slower mortgage repayments. The day has come when no one can pass on useless costs to a housing-starved public.

The high cost of code-enforced waste is the biggest single reason homebuilders find it hard to get their prices down to reach a much broader market among lower-income families. It is the biggest single reason they find it hard to answer public housing's challenge to provide good homes for everyone at prices they can afford.

Ten years ago the homebuilders were not strong enough to take the lead in a successful battle for uniform codes and standards. Today they are well organized at the local level, well organized at the national level. They are fortunate in national leaders who recognize their social responsibilities. Better than any other interested group, the homebuilders are now in a position to lead the final drive for uniform standards at both the local and the national level.

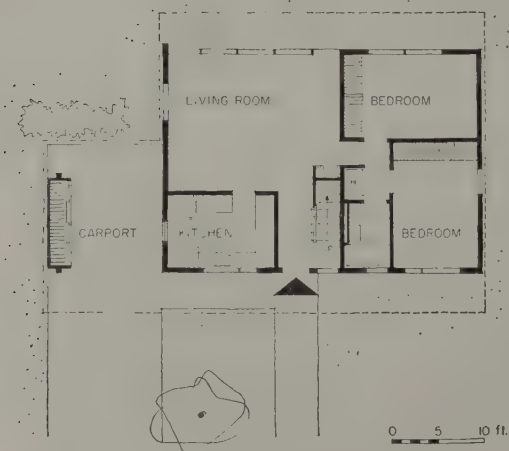
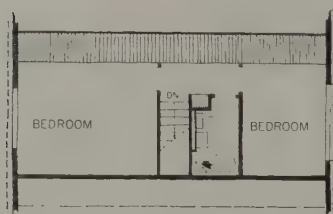
**There is no greater service they could perform for the community—and no project they could tackle that would do more for the health and prosperity of their maturing industry.**

# EXPANSION-ATTIC TRUSS

offers new way to make small houses bigger at minimum cost

*"Many builders would like to use roof trusses to save materials and manpower and to achieve complete flexibility for their room layouts (since interior walls would no longer have to be spaced to help support the ceiling). Unfortunately, most present trusses make it impossible to use the attic space for storage or future expansion.*

*"HHFA and BRAB should co-operate immediately to correlate and complete the necessary research to make generally available a roof truss design which would permit maximum attic use."—Recommendation of THE MAGAZINE OF BUILDING Round Table on Waste in Homebuilding, Feb. 1951.*



Here is one possible plan for two floors of a 24' x 34' house using the expansion-attic trussed rafter. Plan would be much better if the house were a few feet longer. (At stair one truss is displaced 1'.) In most FHA districts the inside bath upstairs can be ventilated through open space under the roof, whose ends would be closed only with louvers. An exhaust fan in one gable end would make it possible to give the upstairs bedrooms through ventilation.

If you take a good look at the photograph on the opposite page you can figure out for yourself the biggest secret HHFA has up its research sleeve and one of the more important new house-framing developments for some time.

This is the new expansion-attic trussed rafter developed by the Small Homes Council at the University of Illinois under a research grant from HHFA. It suggests what is almost certainly the cheapest of all possible ways to add another 300 to 400 sq. ft. of good space to a small house. It is the pet idea of Leonard Haeger, now NAHB's research director, and the research grant was approved by HHFA right after THE MAGAZINE OF BUILDING held its Round Table (of which Leonard Haeger and William Scheick of Building Research Advisory Board were both members).

The photograph (just released for publication) is supposed to show only that the truss is being tested with weights for "5' of wet snow"\* and a 30 lb. floor live load. Actually it shows all the details of its construction, and shows that the Small Homes Council has met the challenge with a solution that answers several problems at once:

1. It provides a clear space 12' wide and 7½' high running the length of the attic—enough for two bedrooms of which the largest is 12' x 15' plus bath plus stairway and hall and abundant closets over a 24' x 34' (816 sq. ft.) house.

2. It provides a 32" overhang front and back, but keeps the bottom of that overhang from coming down below the ceiling line—though at the cost of a slightly ungainly rise in total height.

3. It permits a lower (8 in 12) roof pitch than the usual expansion attic house (bringing height down again).

The truss is described in the HHFA release as "the best of several designs developed, the easiest to fabricate and erect and the most economical in the use of materials." It is an odd underslung affair, supported partway up the rafters and not at the joist line. This is done by cutting in small triangles at each end. The apex of each smaller triangle is the saddle for the wall plate. The outer leg is the rafter end that forms the overhang. The inner legs of the two small triangles are diagonal 2 x 4 struts between whose ends is hung the 12' long 2 x 8 that forms the floor joist for the attic rooms. The base line of each small triangle is the 2 x 4 joist that completes the ceiling out to the eaves; but this is nonstructural and can be nailed on after the truss has been dropped on the plate. This explains how the studs can come up through the ceiling line to a plate directly under the rafter.

The present design is profuse in ring connectors, using six: one at either end of the two diagonal struts, one at either end of the collar girt. The other connections are made with nails. Rafters appear to be 2 x 6's, attic floor joists 2 x 8's, all other lumber 2 x 4's.

The truss appears to use between 95 and 100 bd. ft. of lumber for a 24' span, with 2'-8" overhang. This is about twice as much as the most economical trussed rafter with a 5' in 12' pitch, but it is only about half as much as the usual expansion-attic house without truss construction requires just for roof rafters and ceiling joists on 16" centers. (This does not count the further economies permitted under most codes by wider stud spacing in nonbearing walls and partitions.)

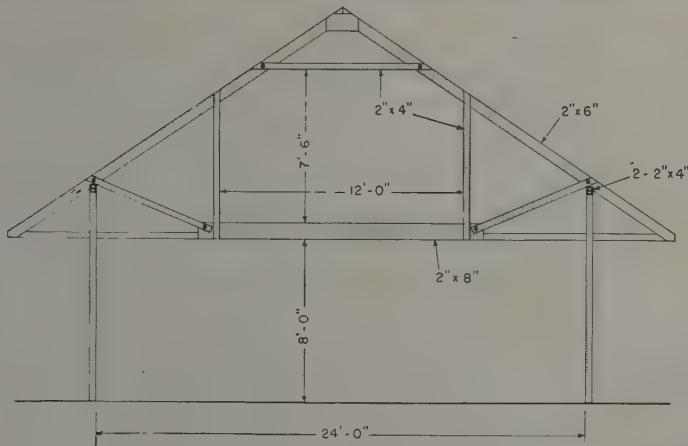
Development of the truss is in the capable hands of James T. Lendrum, director of the Small Homes Council, and Willard J. Worth, his research assistant and project supervisor. Upon completion of the project, findings will be submitted to Joseph H. Orendorff, director of the HHFA Division of Housing Research, for official publication next year.

\* Maximum weight 250 lb. and virtually impossible on an 8-12 pitch.—Ed.





*Experimental expansion-attic trusses were hung with concrete blocks by Small Homes Council to simulate snow and live loads.*



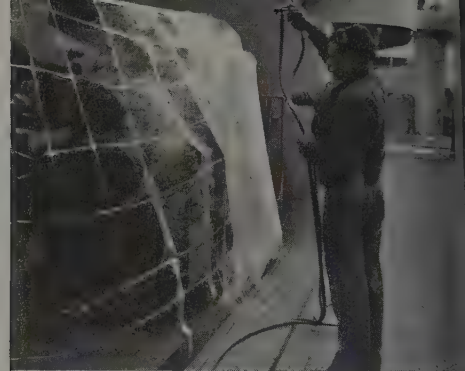
*Rafter truss with essential structural components shown in gray indicates low center of gravity useful in erection. (Other parts of truss fulfill necessary duties and help brace the structure.)*

*Perspective shows house with slab-on-grade foundation, yielding lowest possible eaves line for better proportions. While easy roof slope (8 on 12), helps lower roof line, a longer plan would further decrease the effect of "too big a hat."*





*White vinyl plastic being sprayed over the cement block walls of apartment building.*



*Vinyl plastic mothballing was developed to preserve valuable military and naval equipment.*

*Twitchell & Rudolph used mothballing to provide a flexible seal for their tensioned roof.*



*Ezra Stoller-Pictor*

## **SPRAYED PLASTICS** find new uses in building by providing a tough, leathery skin with good resistance to moisture, corrosion, heat and cold

One of the most versatile building materials developed in the past decade is a plastic waterproofing material that can be modified to suit even the most rigorous of weathering tests, can be used both indoors and out, and is not subject to cracking by expansion or contraction of the base it covers.

In housebuilding this high bond skin can be used to advantage:

- ▶ to waterproof foundations below grade—on a Miami hotel seasonal flooding of the cellar was cured by spraying the exterior of the foundation wall with a layer of vinyl plastic followed by a layer of gilsonite at a cost of about 40¢ per sq. ft.;
- ▶ to repair and prolong the life of exterior masonry and concrete walls—on the apartment houses pictured above the first coat of sprayed plastic contained an aluminum plasticiser to withstand the actinic rays of the sun and the resultant gray skin was coated with a white pigmented plastic for color; cost was about 45¢ per sq. ft.;
- ▶ to substitute for metal whenever flashing is required—with the sprayed plastic reinforced with glass fiber and coated with gilsonite, the applied cost still promises to be under a \$1 per sq. ft., considerably cheaper than hard-to-get copper flashing;
- ▶ to provide easily cleaned, durable and waterproof surfaces for bathrooms, kitchens, playrooms, etc.—a single vinyl plastic skin used on the masonry walls of the rooms and kitchens of the Broadview Hotel in Wichita, Kan., cost 20¢ per sq. ft., compared with tile costs of well over \$1 per sq. ft.

Although vinyl plastic skin does not support combustion, it will decompose if held in a flame, and cigarettes put out against it do leave a permanent black stain which might sometimes preclude the use of this material as a floor covering.

Originally developed by the army and navy to mothball valu-

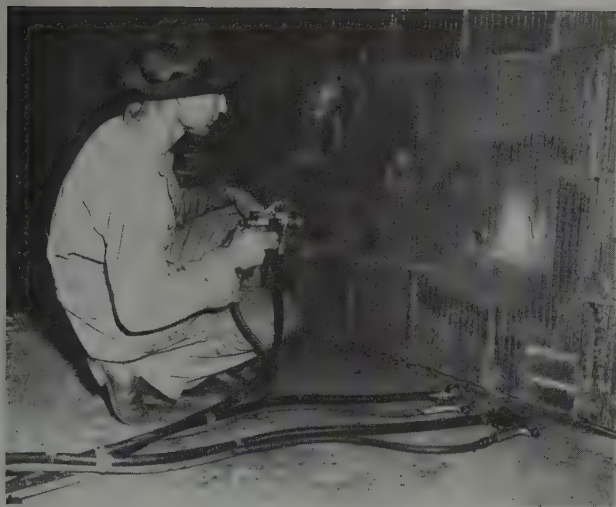
able exposed equipment, these organic chemical plastics have already been considerably used in larger buildings where the large surface areas permitted the most efficient use of the spray equipment involved. Several large houses in Florida have been completely mothballed in this continuous skin, which successfully prevented driving winds and rains from creeping beneath and dislodging roof tiles. Architect Paul Rudolph found it a most satisfactory material to waterproof the catenary curved roof of his modern house (June '51 issue), but he stresses the importance of the plastic skin being of equal thickness throughout, and, used externally, at least 45 mils thick.

Vinyl plastic is an organic material made up of salt, natural gas, chlorine and ethylene. It is a vinyl chloride-acetate polymer—a liquid vinyl plastic. The polymer is dissolved in carefully balanced

*Plastic skin provides watertight flashing around window and roof projections, eliminates time-consuming calking operations.*







*Used to repair and waterproof walls, sprayed plastic bridges and seals any holes or cracks. Care should be taken that no moisture is trapped behind the continuous skin.*

solvents; plasticisers and pigments are added to obtain the optimum properties for the particular application intended. It is applied with spray equipment using an air compressor capable of delivering 25 cu. ft. per min. to each gun at a pressure of 90 lbs. per sq. in. For one set of spray guns this equipment will cost around \$200 excluding the compressor. The film can be sprayed quickly, coating 100 sq. ft. with a dry film thickness of 15 mils in less than 12 mins. The gun is held about 8" from the surface (which must be perfectly dry) and kept moving fairly rapidly. In some areas difficulties arise where certain building unions oppose the use of spray equipment for painting, but in Florida they have agreed to permit vinyl plastics to be sprayed since it is quite impossible to apply this material with brushes.

For rough estimating the cost of vinyl plastic is 1¢ per mil per sq. ft. For interior surfaces a thickness of 15 to 20 mils is sufficient while exterior surface thickness will depend upon the degree of exposure to be encountered. The skin should only be sprayed upon dry materials as any entrapped moisture might lead to deterioration of the material being covered. (Thus wood, or built-up roofs containing felt and tarpaper, cannot be satisfactorily mothballed since these materials tend to deteriorate before the plastic skin, and would provide a difficult maintenance problem.) In addition, care should be taken not to spray over any sharp edges; these might cut the skin and start leaks.

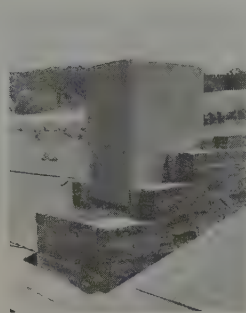
Most immediate applications of vinyl plastic spray are in the renovation and repair of old buildings. The surface is first cleaned with a wire brush, then coated with plastic spray. There is no need for calking. The spray is simply driven into cracks which are thus completely sealed up. Any deep cracks or holes can be filled with a mixture of wet spray and sand, which provides an excellent calking material. This is then covered with plastic spray and left to dry in the normal manner. The material can be handled in 30 mins., dries hard in 12 hrs.

Depending upon the composition, vinyl plastics can be obtained for about \$5 per gal., but unless the job is large enough to warrant training of the builder's own men, most distributors prefer to use their own experienced crews and spray the material on a contract basis. One gallon of plastic will cover 25 sq. ft. of surface with a skin about 20 mils thick. FHA has not yet approved sprayed plastics—but only because no one has applied for approval.

## **FLEXIBLE FLASHING:** reinforced synthetic rubber can be applied with brush

Whereas vinyl plastic can only be applied by comparatively expensive spray equipment, this synthetic rubber compound can be applied with a brush, making it available for the thousand-and-one small flashing and weatherproofing jobs that housebuilders are always called upon to do.

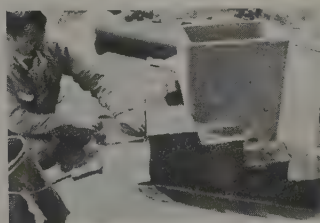
Illustrated here is a small chimney flashing job done on a new house at Somers, N. Y. The area to be weatherproofed is first coated with a layer of this air-dry synthetic rubber that, after being brushed on and exposed to the air, cures chemically without the need of vulcanizing or the application of heat. Immediately afterward glass fiber fabric is applied atop the fresh air-dry rubber; the fabric, cut into strips as required, is applied in such a way as to overlap and to seal all joints between the chimney and the roof. This glass fabric is sealed with a second layer of air-dry rubber. After 45 mins. the rubber is dry but to ensure that a completely moisture-proof seal has been achieved, it is left to stand for 24 hrs., then brushed with a final skin of air-dry rubber. After this, finishing masonry is applied atop the plastic skin.



*Chimney of house at Somers, N. Y., left, ready for flashing with synthetic rubber. First, the compound is brushed on exposed surfaces.*



*Glass fiber fabric, right, cut to shape, is spread on the still tacky rubber compound.*



*Exposed brickwork and adjacent roof surface, left, is completely sealed with fabric, then given another coat of rubber compound.*

*After setting for 24 hours, final coat of synthetic rubber ensures full protection to chimney, right. Time—one man, ¾ hours; estimated cost—90¢ per sq. ft.*



*Rest of masonry, left, is built over the synthetic rubber flashing to provide tough, weather-resistant joints that, tests indicate, should be good for 20-30 yrs.*



This colorful house is a good example of how a functional program can be transformed into an exciting, poetic piece of architecture.

For all its apparent complexity, this house is a very direct answer to three simple questions its architects asked themselves:

1. How to get a living space that looks both *out and up* toward a view of mountain tops to the north, and *out and down* toward a view of the ocean to the south?
2. How to translate the owner's imaginative notion—"a house that looks like a tent under the trees"—into a practical solution for a single woman who wants to maintain the place largely by herself?
3. And how to take care of dozens of little things well—down to tin-can disposal—that are usually supposed to be done well only in the unglamorous, practical house?

The answer—suggested, perhaps, by the owner's notion—turns out to be very similar indeed to some huge, triangular tent, whose ridge slopes up toward the north to a height of 20' (and thus carries the eye up toward the Santa Ynez mountain range a mile away); and slopes down toward the south to a height of only 8' (and thus carries the eye down toward the Pacific two miles away—and, incidentally, serves as a perfect shield against the sun.)

The flaps of this vast, triangular tent are all glass. The roof itself is framed in wood supported on a spine of steel that is the ridge. The big roof shades an area in the shape of an isosceles, 90° triangle, 76' long at the base and almost 60' long on its two short sides. Under this triangular shield are located the living and dining areas, and the main entrance. (These are contained in a smaller 90° triangle that measures, approximately, 50' x 36' x 36'.) Finally, two short low-roofed wings, containing bedrooms and services, abut the glass triangle at each end of its hypotenuse.



# GLASS TENT

A simple program translated into a poetic design

LOCATION: Montecito, Calif.

LUTAH MARIA RIGGS, architect

ARVIN BENJAMIN SHAW III.,

designer in charge & office director

THOMAS CHURCH, landscape architect

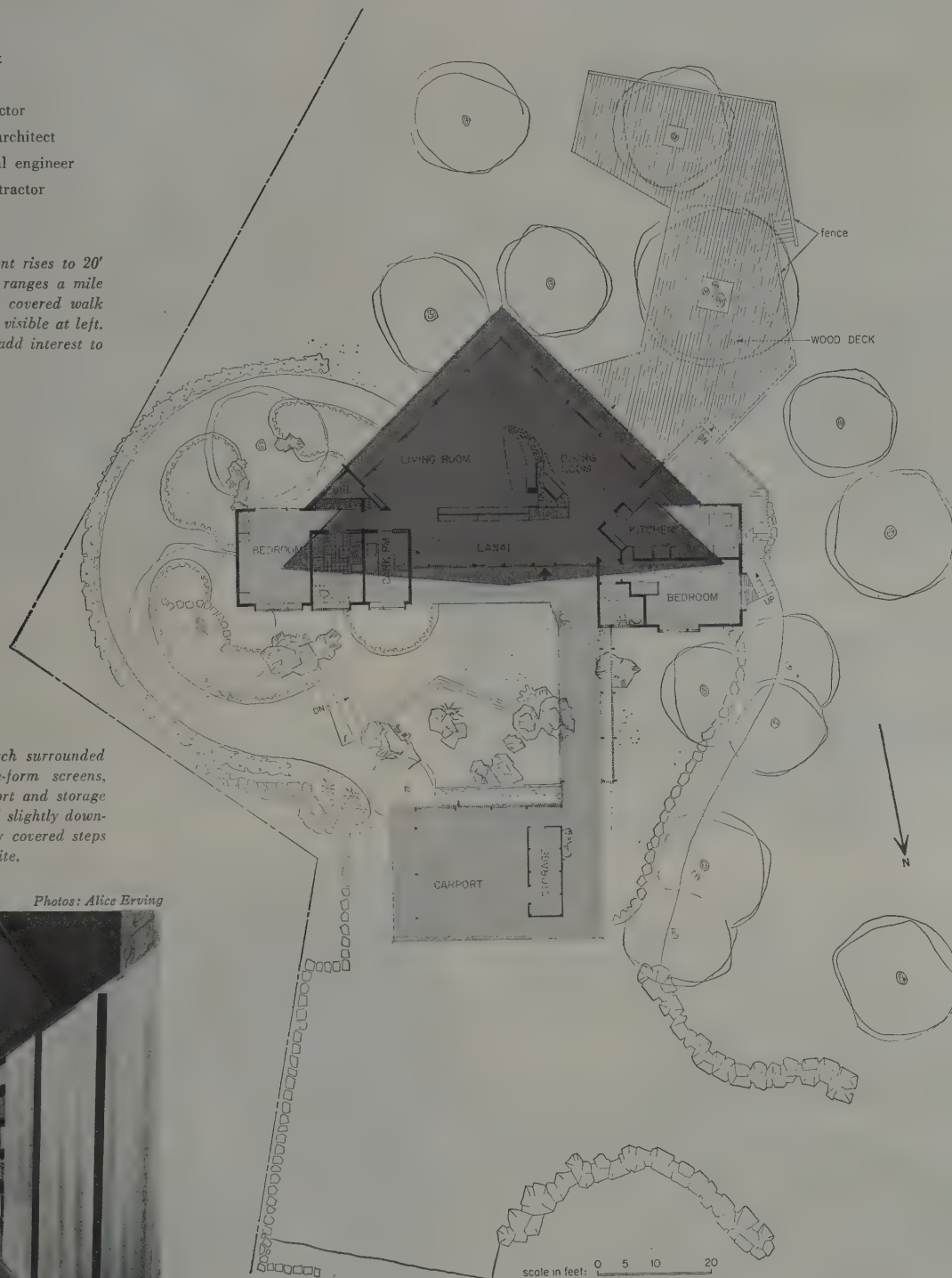
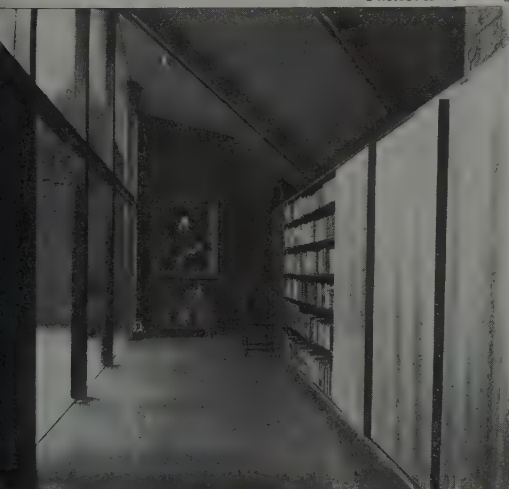
DONALD F. SHUGART, structural engineer

GEORGE F. PETERS, general contractor

*Opposite: North facade of glass tent rises to 20' height, takes in view of mountain ranges a mile away. Main entrance is at end of covered walk on the right; one bedroom wing is visible at left. Boulders like those in foreground add interest to sloping site.*

*Landscape architect Thomas Church surrounded the house with his typical free-form screens, planting beds and terraces. Carport and storage areas are located to the north (and slightly downhill) and linked to main house by covered steps and walk. Oak trees existed on site.*

Photos: Alice Brving



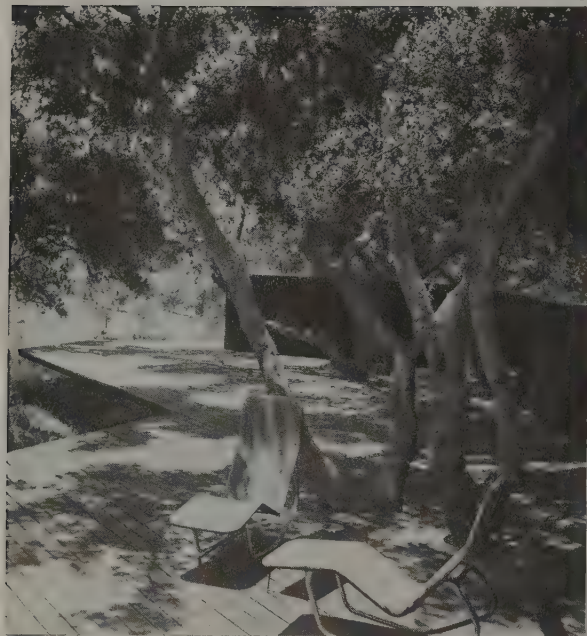
*Entrance area is screened from main living room by free-standing, 6½' high bookcase. This is high enough to shield the fireplace area, low enough to permit a view from living room proper of mountain ranges to the north (see next page).*

**The fireplace is the center** of this glass tent. The huge masonry shape which was designed in a full-size model (with the help of sculptors Edna & William Hesthal), harbors not only the 10' wide living-room hearth, but also a barbecue on the dining-room side and a wood storage bin. In addition, it acts as a space-divider, separating dining from living area. The bookcase wall extending from the fireplace mass screens off the main entrance.

This island of stone and wood in the middle of the glass tent may strike some as rather heavy in form; yet whatever its sculptural merits, it serves as an effective focal point in the otherwise wall-less space and carries further the analogy of some spacious camping ground. For this house—like Philip Johnson's *Glass House* (Nov. issue '49)—is simply a clearing among the trees, a shield against sun and rain, with a campfire in the center. But unlike the Mies and Johnson glass houses, this one has a sloping and overhanging roof, and takes care of the bedrooms and essential services in two solid-walled annexes.

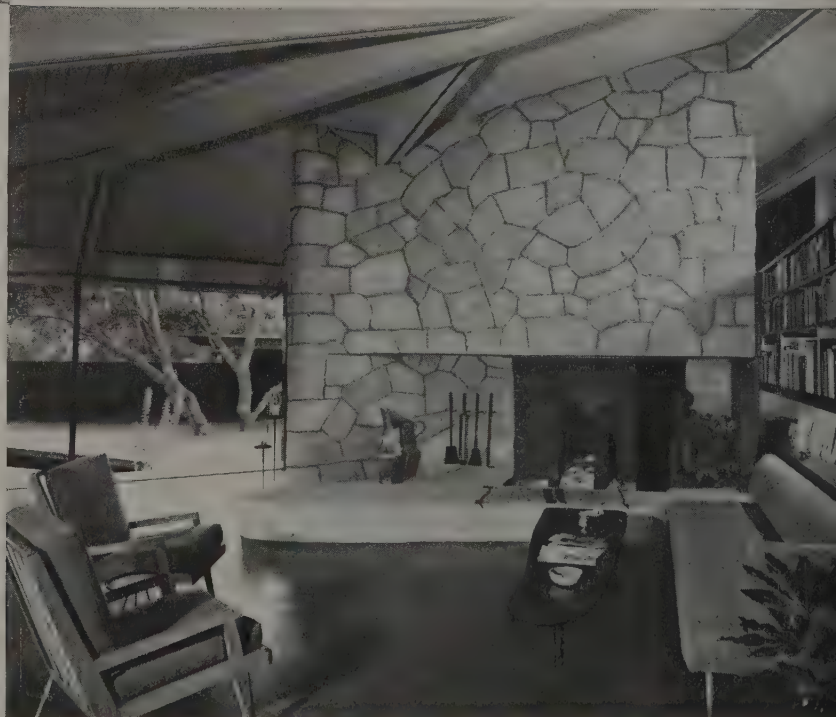
**The two-way view** that you get from this camping ground is explained in the diagram on the opposite page. The roof-shield was pitched at an angle of approximately  $30^\circ$  to take in the mountain ranges to the north. The  $6\frac{1}{2}'$  high bookcase was placed so as to blot out the immediate foreground (carport, entrance patio and platform) and to form a kind of baseline to the distant mountain tops—an example of subtle, three-dimensional design. To the south, however, where the view of the Pacific is relatively distant and not overly dramatic, the architects deliberately created an interesting foreground view to supplement that of the ocean: a boomerang-shaped wooden platform, designed with landscape architect Thomas Church, and screened against the road by a solid  $6\frac{1}{2}'$  high fence, swings around this side of the house and supplies an outdoor living area almost twice as big as that under the "tent" itself. (The screening fence also makes curtains in the glass triangle unnecessary.) The wooden platform was raised off the ground on short posts, obviated the need for expensive grading around this end of the house. It requires no upkeep. Church suggested that the platform be made as large as possible, and that remainder of site be left largely untouched.

Photos: Alice Erving



Wood platform curves around southern tip of glass living area, is shielded by  $6\frac{1}{2}'$  high fence from the street below. Platform rests on posts which made grading of this part of site unnecessary.

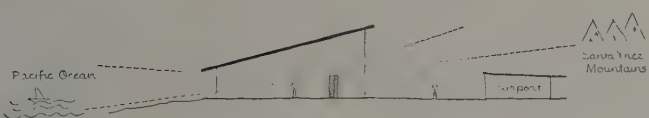
Center of living area is tremendous sandstone fireplace with 10' wide hearth. Floors in living area are terrazzo.



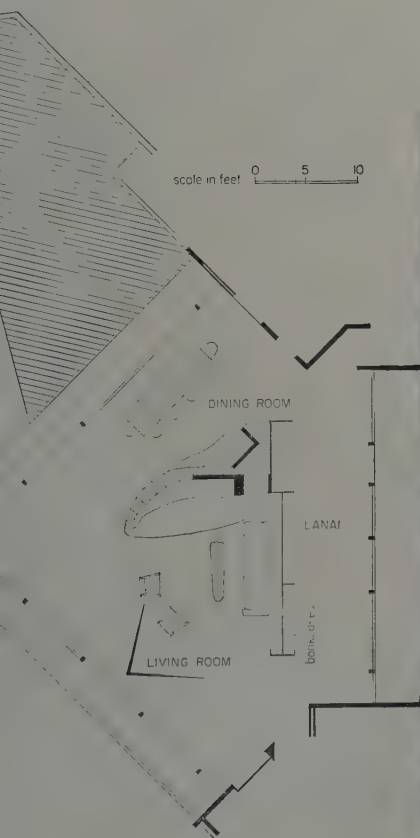




*Southern tip of glass tent is shielded by low roof, deep overhang*



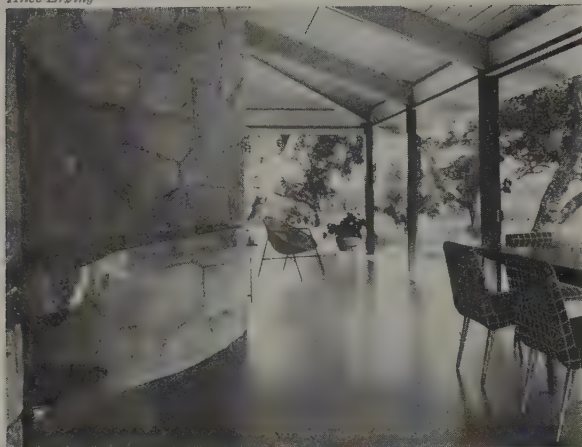
*Diagram left illustrates how roof was pitched to take in views of high mountain range, and of low Pacific coastline, and how freestanding bookcase was used to screen living area against entrance, and blot out garage as you look out of living room.*



*View of 6½' high bookcase showing Santa Ynez mountains above it in the distance*



Alice Erving



Dining-room side of fireplace mass has barbecue set into black iron shelf (left). Fire heats iron sufficiently to make shelf a good plate-warmer.



Richard Fish

Kitchen has innumerable built-in devices, including tin-can disposal unit set into counter at right. Cans are dropped into disposal unit, which can be emptied from outside the house. This seems like a first-rate idea, applicable to builder houses whose kitchens face the street.

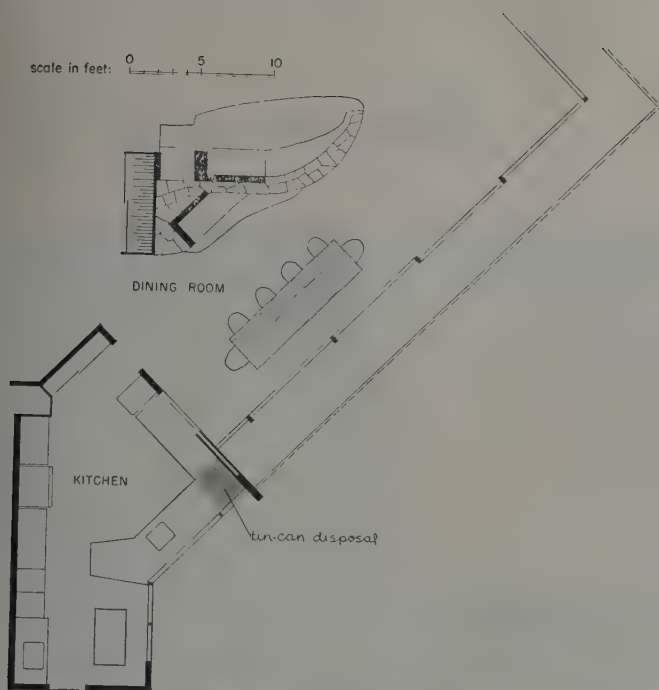
**This is an eminently practical house**, despite all its fanciful detail. The owner—Alice Erving, a photographer—lives alone, wanted a place that she could manage with a minimum of outside help. Both bedroom wings, for example, can be closed off completely from the main living area, thus don't have to be kept presentable at all times. In fact the owner can just about shut herself off in her bedroom wing when she is working in the darkroom—which is part of that wing. Similarly, guests (or a possible future maid) can have complete privacy in their part of the house if that is what they want.

The architects thought through a good many details that are frequently overlooked or left unstudied: bathroom wash basins are a reasonable 36" high like kitchen sinks; a tin-can disposer was built into the kitchen counter—you toss the cans into a receptacle that can be emptied from the outside; an elaborate but compactly designed radio-phonograph combination was built into the owner's bedroom wall (she has an excellent record collection, likes to play them at night without disturbing her guests); and there are so many built-in closets, drawer units, shelves, etc. that the house looks incredibly neat at all times.

If all these practical points prove anything at all, then they demonstrate that efficient details, good sun control, with equally good view control, landscaping that provides plenty of privacy, etc. don't need to add up to a maze of gadgets or to some sort of functionalist nightmare. For this is, above all, a very poetic house—and regardless of whether or not you like each individual stanza, the architects certainly produced a fine flight of fancy with a lot of common sense.



scale in feet: 0 5 10



## GLASS TENT

*Dining area overlooks the boomerang-shaped wooden platform that swings around south end of house. Note solid fence around platform. View of distant coastline is past platform, to the left and down. Small oaks existed on site; Riggs and Shaw removed only one in building this house.*

*Alice Erving*



LOCATION: Sands Point, L. I., N. Y.

HENRY HEBBELN & WILLIAM DIEDERICH, architects  
MARIANNE STRENGELL, fabrics

BALDWIN & MACHADO, prints  
JEANNE REYNAL, mosaic

# The one-room,





# split-level house

Its advantages,

its excitement,

its problems

Most split-level houses are divided vertically in a proportion of 2 : 1 . . .



or in a proportion of 2 : 1½



There are two basic advantages to one-room, split-level plans. First is the dramatic space-relationships you can get. Here are a few:

- ▶ a living area whose importance is emphasized by its greater ceiling height;
- ▶ visual privacy between different levels; i.e., you can do away with most opaque partitions around individual rooms, for anyone on an upper-level gallery will probably be out of sight of anyone in a lower-level living room;
- ▶ a great feeling of spaciousness because you can see all the ceiling plane of the house all the time, wherever you are;



- ▶ and a succession of different views and of different space sensations inside the one-room house, and a succession of different views of the outside—depending upon the level where you are standing.

The second advantage has to do with the site: if you are building on a sloping lot and your access is on the uphill side, the 2 : 1 scheme fits the contours like a glove. (The 2 : 1½ scheme also fits a sloping site, but produces a living room oriented uphill.) The one-room 2 : 1 scheme will give you:

- ▶ an upper-level entrance on grade;
- ▶ a lower-level living room on grade at the downhill end of the house;
- ▶ an inexpensive space underneath the gallery (and between foundation walls) in which to tuck away services;
- ▶ and a dramatic entrance view from upstairs across the 2-story living room and toward the outdoors.

This is the real excitement of split-level houses: you never feel boxed in. The interior space has a quality of expanding in all directions, up and down and across; it keeps adding up to new and more exciting interior and exterior vistas, to visual surprises, to fascinating interplays of planes, forms and volumes.

Moreover, the added volume over the living room is cheap cubage (Charles Eames spent \$1 per cu. ft. for his 2-story living room); and the visual privacy produced by changes in floor levels means that you don't need many partitions. Finally, the split-level house on a sloping lot can make excellent use of cheap cubage between foundation walls.



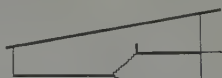
But split levels present no serious problems on flat sites either. The 2 : 1 scheme is, of course, most easily adapted to a level lot; but even the 2 : 1½ scheme can be made to work on such a lot without trouble. Its added advantage: stair runs are only half-flights.

However, the split-level plan does present two major problems: how to keep the living room from growing too tall for its plan (and thus looking like an airshaft); and where to place your entrance for maximum dramatic effect.

The tall living room is both the most attractive feature of the split-level house and its most challenging problem. In the 2 : 1 scheme, the living-room height is determined by two single-floor heights plus the thickness of the floor structure between them—which is likely to add up to 17'.

Since the living room is likely to have at least two walls that are less than 17' long, these walls will be taller than they are wide—a fact that can easily make the room seem like an overly high airshaft.

The simplest way of avoiding this is to slope the roof ceiling to cut down the inside height over the living area. The exact slope is determined in part by the clearance required at the balcony rail. The result is the sensation of a double-height living room with-



One of the most spectacular trends in postwar residential architecture has been the increasing popularity of the one-room, split-level house, with all its possibilities for open planning in three dimensions. Men like Charles Eames, Mario Corbett, Don Emmons (Sept. '50, July '52, Feb. '52 issues, respectively) have found that this plan gives them added visual excitement, privacy without loss of spaciousness and airy volume at low cost.

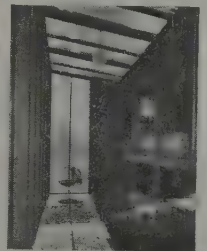
The design shown on these pages is one of the newest—and one of the most exciting—solutions to the complex and numerous problems of the one-room split-level house.

out the 2 : 1 scheme's overpowering height.

It is much easier to solve the living-room height in 2 : 1½ schemes, where it is determined by approximately 1½ single floor heights, plus the thickness of the floor structure—which adds up to only about 13'. In most houses, the living room is not likely to be narrower than that. However, the price you pay is burying the lowest level of the 2 : 1½ house partway in the ground.

The dramatic entrance is not an essential element of the split-level scheme; but it is easy to achieve in this type of house.

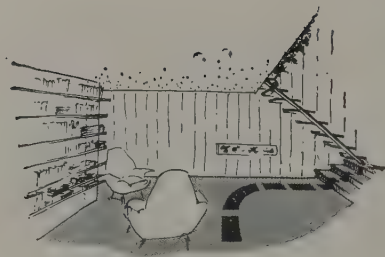
If you locate the main entrance in the tall living area, much of the element of surprise may be lost; for the whole concept will be apparent to the visitor even before he crosses the threshold. There are several alternatives:



Entrance on the balcony is the obvious solution in a hillside scheme. It has a few drawbacks, however. To begin with, you do see most of the house soon after you have entered it. Next, you may have to place your kitchen-dining-utility areas on the balcony, tuck away the bedrooms under the balcony (where views and ventilation are likely to be less satisfactory). And, finally, you may find that walking downstairs into the living room, and then making an about-face to walk into the areas under the balcony produces a let-down.

Entrance under the balcony is easiest achieved on a level site. It has many advantages: first, it leads you into the house under a low ceiling, then brings you into the tall living space with a dramatic bang. Next, it permits you to place bedrooms on the balcony level where they have privacy, good views and excellent cross-ventilation. Finally, the scheme puts all daytime areas on one level (in the 2 : 1 section, at least), since dining-kitchen-utility spaces will be under the balcony.

The Hebbeln-Diederich house shown here is an excellent solution embodying the best features of both the 2 : 1 and the 2 : 1½ schemes. In the development of the one-room, split-level house, their design is a handsome landmark.



... you are now under the balcony. On turning right, you begin to sense the large space beyond ...

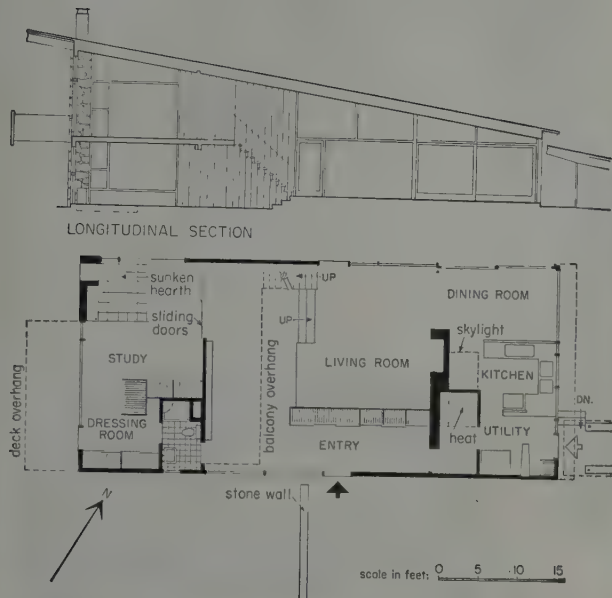


As you enter the house, you are faced by a free-standing closet and forced to make a left turn. The tall, narrow space and the balcony give you only an inkling of what the house is like ...

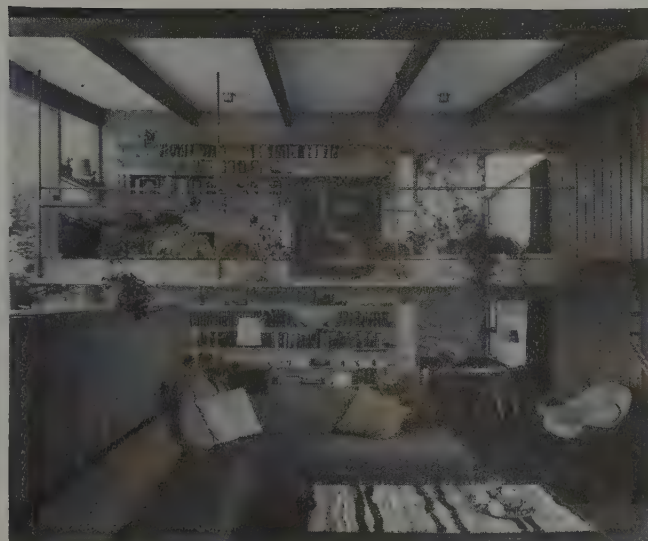
... upon walking out from under the balcony, you suddenly see the whole living area. Three steps lead up to its floor level. Photograph below shows the handsome masonry of the fireplace, the view beyond.







Photos: Lionel Freedman



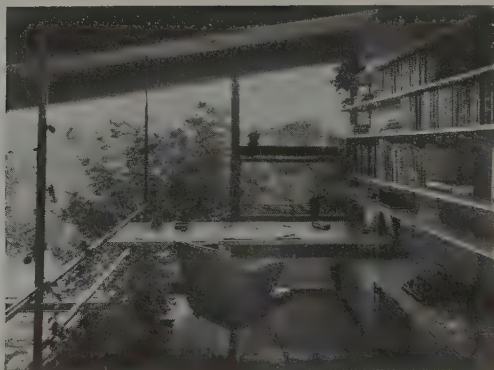
View from fireplace looking back at the two-level division to the southwest. Upstairs is a bedroom suite, work area and books; downstairs is a study-bedroom with its own bath and dressing area. Both levels have small fireplaces.

**The Hebbeln-Diederich house** is (more or less) a 2 : 1 split level. The balcony contains a bedroom, dressing room and bath; underneath the balcony is a study (with another dressing room and bath to make this an additional bedroom if and when the need arises). The tall space to the northeast of the two levels contains the main living, dining, kitchen and utility areas. The whole space—60' long and 26' wide, varying in height from 7½' at the northeast end to 18' at the southwest—is in effect one tremendous room, very lightly subdivided by levels, free-standing closets and the fireplace wall.

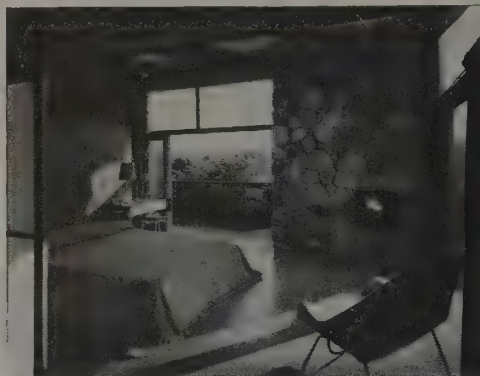
**The architects solved the problem of the tall living room** by dipping down their roof plane to make the room appear less vertical, more elongated. The angle of the roof was determined by the 7½' clearance at the balcony edge and by a similar ceiling height at the far, northeast end of the house.

**They solved the problem of the dramatic entrance** just as successfully: site and other considerations made it advisable to have the entrance door lead directly into the tall living-room space. But to keep you from seeing the entire space right away, Hebbeln and Diederich have screened the entrance door with a 6½' high, free-standing storage cabinet. As a result, you have only an inkling of what the house is like as you cross the threshold, are forced to turn to your left and pass underneath the balcony—and then, to heighten the drama, to walk up three steps before you see the whole, dramatic interior. This succession of space sensations is very exciting. The progression from a narrow and tall, through a wide and low and, finally, a few steps up into a large, double-height space is handled with tremendous skill and understanding of the essential elements of architecture—space and movement through space. (See Hebbeln's sketches at top of p. 122.)

*Upstairs this house has a writing desk and a wall of bookshelves that screen the bedroom (below).*



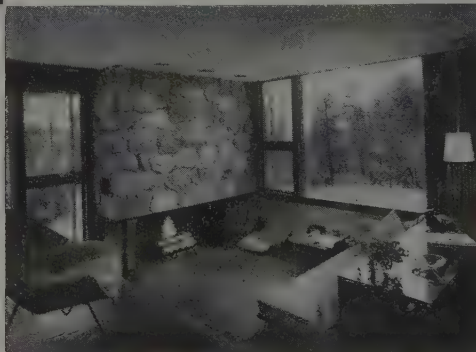
*Bedroom balcony faces southwest*



**Downstairs, underneath the gallery, there is a study-bedroom. Like the one upstairs, this has its own fireplace.**

**The site** of this Hebbeln-Diederich house is a 5-acre sandy knoll sloping toward nearby Long Island Sound. As the picture above shows, there is a profuse growth of wild cherry, cedar, dogwood, sumac and honeysuckle. A tidal creek cuts the property in half; between it and the Sound is a flat strip of sand. The owners—a young doctor and his wife—located the site when they took a plane from New York, looked for the first rural area within easy reach of New York's hospitals, found the strip of sand and landed the plane on it.

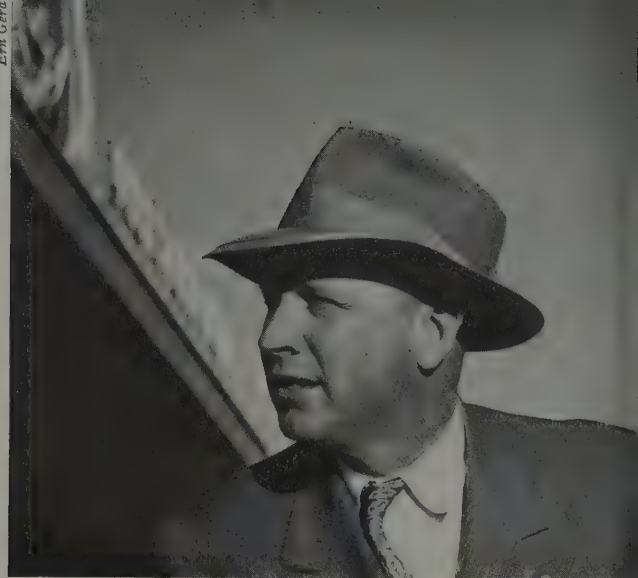
The architects not only fitted their house closely into the contours of the little hill; they also demonstrated how a shed-roof house on a slope that parallels the pitch of the roof can be kept from looking as if it were about to slither downhill. By kicking up the roof over the half-buried car shelter (and thus reversing the pitch of the continuous roof line at the downhill end) Hebbeln and Diederich not only emphasized the importance of the main entrance to the house; they also gave the over-all form of their building balance and repose. This careful, three-dimensional site planning, together with the unpretentious detailing of natural materials, gives the house a wonderful sense of fitness in this pleasant landscape.



*Opposite: View from the northwest of two-story end of house. Bedroom above, study below.*







NAHB's President Alan Brockbank

## Alan Brockbank's firsthand report on the Nation's slums and what to do about them

Homebuilding is our business, and that means it is our business to see that every American has a chance to have a good home at a price he can afford to pay. We members of the National Association of Home Builders recognize that this responsibility is ours, and we realize that this is one of the toughest challenges private enterprise faces today.

Because we homebuilders recognize that challenge, I have made it my business as the Home Builder's president to visit the slums of almost every major city in the country, to talk to the people who live in those slums and to talk to the people who are giving their lives to improve conditions there. I have seen the slums of Washington, Baltimore, Charlotte, Philadelphia, New York, Boston, Detroit, Chicago, Dallas, Indianapolis, Los Angeles, Houston and many other cities. And let me say right away that much of what I saw was shocking, and no American, no matter how poor he is, should have to live the way I saw some people living in every one of those cities.

But seeing these conditions first hand was not just shocking. It was also very revealing, and I learned three very important things about slums and how to provide better housing for low-income families:

### 1. You can't eliminate slums unless you take the profit out of slum ownership

The cities which are cleaning up their slums fastest are not the ones spending the most local and federal tax money to build public housing. In fact the fastest progress that has been made by any city is that made in the city of Pasadena with its operation "junk yard." Under this plan, which was entirely a local operation, a complete study was made of every structure within the city. Those that were in poor condition beyond renovation were torn down. Those that could be repaired were repaired and put in good condition; and the whole operation was performed at low cost.

Another city that is making excellent progress and one which has very little public housing, is a city with a large Negro population,

Charlotte, North Carolina. In 1940 a survey showed 11,589 substandard dwellings in that small city. A five-year attempt to clean up this menace through public housing reduced this number by only 820. Then the Charlotte Real Estate & Management Association took the problem in hand in cooperation with the City Planning Commission and the city government and put through an order forbidding such substandard housing. As a result, 7,986 of these substandard units have now been rehabilitated; 817 have been demolished as unfit for human occupancy. By the end of another year it is hoped that there will not be a substandard dwelling left. All this has been accomplished at the expense of the landlords instead of the taxpayers.

I believe in free enterprise and the profit incentive, but in a Christian country there is no excuse for anyone being allowed to make a profit from human misery, and there is no reason why a landlord should be allowed to make a profit renting substandard homes that are not fit to live in. There is no reason why the taxpayers should be saddled with the cost of slum rehabilitation to protect the slum landlords' profits.

Actually, the landlords who improved their property in Charlotte are now finding their property more profitable rather than less, for they were allowed a small increase in rent to amortize the cost of the improvement, and the tenants have been able and glad to pay the necessary increase. Landlords in Baltimore have had the same experience: they are making more money on their property after making it fit to live in than before.

### 2. You can provide low cost housing a lot more economically by modernizing old dwelling units than by building new ones

Of course, there are many old buildings that are past repair, and the sooner they are torn down the better. There are many slums that never were anything but shacks and shanties, and the sooner they are wiped out the better. But in many cities thousands of slum houses are just as well built as the new public-housing units to replace them are likely to be. When I visited what was supposed to be one of the worst slum areas in Boston, for example, I found most of the buildings could easily be renovated into fine, long-lasting dwellings with many, many years of usefulness, to rent at a very reasonable figure.

Not long ago, I read that three New York City blocks were to be



torn down to make way for public housing. The newspapers said the people in those blocks were living in squalor. I decided I had better see for myself, so I went to New York and took a look, and I talked to many of the people who lived there. None of them wanted to give up their homes. I saw no evidence of the filth and squalor I had been told to expect, and I was amazed to find that most of the buildings were fine old apartments, which could easily be put into like-new condition for \$1,500 to \$2,500 a unit.

I do not believe any nation is rich enough to tear down such well-built buildings to replace them with new dwellings erected at the taxpayer's expense.

Somebody will make a lot of money out of tearing down those buildings and replacing them with high-cost public-housing units. In fact, somewhere or other the profits on public housing must be bigger than the profits on private housing, because public housing costs a lot more in proportion to what it provides. Many members of our association could, if they wished, get in on those bigger profits, for their experience qualifies them to do a better and more economical job on public housing too. But practically all of us are opposed to public housing because in the long run we believe it is bad for the country to have the government charge the taxpayers for a job that should be handled on a free-enterprise basis.

But the most important thing I learned from my visits to the slums is this:

### **3. You can't eliminate slums just by tearing down old buildings and replacing them with new ones**

The problem of slums is not just a problem of buildings. It is basically a problem of people, and it just isn't true that you can change people just by spending a lot of money to offer them a better place to live. For example: in Dallas when the housing authority paid up to \$8,000 a shack to buy up a war-built shantytown, the people of Dallas begged for a chance to buy the old boards so that they might move them over the city limits and rebuild the shantytown.

And in Los Angeles the police traced not less but more crime, more juvenile delinquency, and more calls for charity per family to a new public-housing development for which the taxpayers had spent millions of dollars, than they found in an old slum nearby.

On the other hand, in Washington I have seen a whole decaying neighborhood taking inspiration from the example of one fine Christian family who moved in among them—a family who could have afforded a nice house in almost any neighborhood, but who chose to live on Old Capitol Hill because they wanted their two children to grow up knowing the problems of the people on the other side of the tracks. When this family began improving their old house, first the children, then the teachers, then the parents took up the idea. The school introduced into its curriculum a daily discussion of blighted-area needs and cures. The children formed an organization called SCROOCH—The Students Committee for the Restoration of Old Capitol Hill. During one spring vacation the youngsters repainted and repaired six old houses. People of all races and creeds began meeting in Christ Church to discuss how they could restore their neighborhood to a fine condition, and they created a climate where this could be done, and the whole area has begun to take on new life and a new look—and without a penny of help from outside and without anybody being moved to a new subsidized dwelling.

In Baltimore you know the story is the same, especially in the neighborhood where some young people from the little Church of Brethren in Chicago are showing their neighbors how to have nicer homes. When this congregation learned of the zeal with which Yates Cook was working to clear up the city's blight they

asked him to find the worst home in the worst slum in Baltimore, buy it for them and help them find the materials to renovate it. In this house the Brethren now have their mission. They have pictures on the wall of each room showing how bad it was before they made it over, and also pictures showing the terrible conditions in the rear yard. Now they take people from the neighborhood through and show them how clean, sanitary, and safe and attractive even the worst old house can be made. They teach the people how to do the needed repairs themselves. More important, they teach them how to live.

I know how successful this work has been, for I visited a block of houses that was a rock bottom slum five years ago, but in which today the people live in clean, sanitary conditions. I went into the houses, and I can assure you they were as clean as many hotel rooms I have stayed in this year. I was told that some of the families in this block had won prizes for their excellent gardens two years in a row, and now some of them are buying their own homes.

**From all this I have learned that the reason for slums is neglect—neglect in keeping up the dwellings, and neglect in the training of people**

I have learned that vigilance in making landlords keep up the property and vigilance in the training of people in how to live in a home are both local problems. This first requires laws governing minimum requirements of health, sanitation and safety. When these laws of minimum requirements are enforced, the people will learn how to live and maintain themselves in clean sanitary conditions.

And now I believe that it is time to propose a new face for America—a six-point program vast in its scope to enable every American family to live in a good home. This program calls for an evolutionary process, not a revolutionary one. It will take time to complete. It will require that a climate be created in which this plan can be carried out.

By this I mean that unless the churches, the service clubs, the women's clubs and the business people clearly see the importance of good clean, safe homes this six point program will have a hard time succeeding. But if they do get firmly behind this housing program, it can be accomplished with joy and satisfaction to all.

#### **This is our six point program:**

1. *Every community must require of all landlords that their housing meet minimum standards of health, safety and sanitation;*
2. *Every community should launch a vigorous program of clean-up and paint-up;*
3. *All property found to be structurally unsound should be immediately condemned, vacated and removed in accordance with a city wide plan;*
4. *Where whole areas are found to be beyond repair, the buildings should be demolished under city authority, with a complete plan for writing off the cost over a period of years through local taxation;*
5. *A direct subsidy plan should be developed through the welfare agencies to help people who cannot afford to pay for proper housing. This should be done entirely on the basis of need, and the welfare agencies should insist that these contributions will be made only when the family so aided is in clean, safe, sanitary housing,*
6. *All segments of the building industry must immediately and vigorously attack the problem of developing lower-cost housing for rent and for sale.*

# Research—an open “Trade Secret”

At NAHB's fourth 1952 “Trade Secrets” meeting builders learned

how research laboratories are solving homebuilding problems

## Among those present:

Albert Balch, *Seattle, Wash.*  
Martin Bartling, Jr., *Knoxville, Tenn.*  
Irvin A. Blietz, *Evanston, Ill.*  
Marcus Bogue, Jr., *Denver, Colo.*  
Alan Brockbank, *Salt Lake City, Utah*  
Laverne Bumeister, *Janesville, Wis.*  
Franklin Burns, *Denver, Colo.*  
Pat Burns, *Los Angeles, Calif.*  
Lou Carey, *Denver, Colo.*  
Ned A. Cole, *Austin, Tex.*  
Frank A. Collins, *Chester, Pa.*  
Thomas P. Coogan, *Hialeah, Fla.*  
Leonard Haeger, *NAHB, Washington, D. C.*  
John Highland, Jr., *Buffalo, N. Y.*  
Floyd Kimbrough, *Jackson, Miss.*  
Fred Meager, *Upper Darby, Pa.*  
Joseph Orendorff, *HHFA, Washington, D. C.*  
Andrew Place, *South Bend, Ind.*  
Thomas W. Poore, *Midwest City, Okla.*  
S. G. Pearson, *Minneapolis, Minn.*  
Frank Robertson, *San Antonio, Tex.*  
Harold Rosendahl, *Minneapolis, Minn.*  
David Slipher, *Los Angeles, Calif.*  
C. W. Smith, *San Antonio, Tex.*  
Herman York, *Jamaica, N. Y.*  
Glenn Webermeier, *Beloit, Wis.*

If you had been a member of NAHB's fourth 1952 “Trade Secrets” meeting at Chicago and Madison, Wis., you would have learned:

1. *Better concrete* and drier concrete blocks can eliminate many cracking slabs and leaking foundations.
2. *Popping nails* are usually caused by green wood.
3. *Paint failures* on exterior siding can be minimized by adequate overhangs.

If you had attended the three-day session you would have seen science and research at work solving common homebuilding problems at the Portland Cement Association's Laboratory and the Department of Agriculture's Forest Products Laboratory. And you would have taken part in the “Trade Secrets” round table, conducted by NAHB's President Alan Brockbank.

## Prescription for good concrete

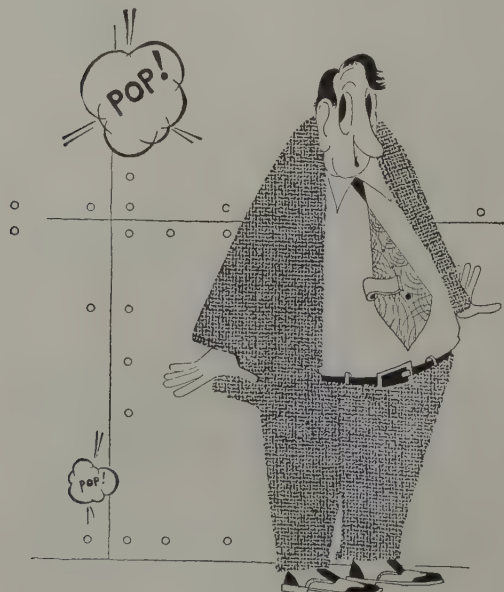
The cement technicians showed the builders the unhappy results of too much water in concrete and concrete masonry units. Many of the cracked foundations that have plagued builders have been due to shrinkage of too-damp building block or poor concrete.

*Advice:* Keep the water/cement ratio between 5½-6 gal. per sack, and use air-entrained concrete (made with a wetting agent similar to household detergents) wherever there is a freezing and thawing problem.

## “Pop” go the nailheads

The vexing problem of nail “popping” that has been the curse of drywall plastering is caused in almost every case by the shrinkage of the wall away from the nail, not nail movement. Framing members, too green when erected, contract and the nailhead then pushes off the coating of “mud” and appears on the surface of the wall. This necessitates all the nails being set again, covered, then the wall redecorated.

*Advice:* Only recommendation the laboratory could make to builders on how to lick the popping was to urge them to “demand” well-seasoned lumber. In no case should they use wood with a moisture content of over 19%, with the optimum figure for most areas about 12%, and ranging downward to a bone-dry 5-7% in regions of exceptionally low humidity. Best friend the builder could have, they intimated, is a moisture meter for spot checking the water in incoming shipments.





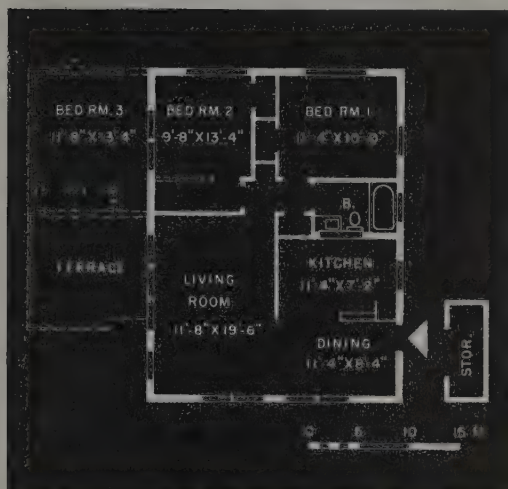
## "Guinea pig" house:

NAHB's Alan Brockbank

tries to incorporate ideas  
gleaned from "Trade Secrets"  
in 1952 model house  
but meets official disapproval  
on some innovations



Joern W. Gerdtz



Like any other builder, NAHB President Alan Brockbank ran smack up against the local code when he and his architect developed this "Trade Secrets" model house to bring Salt Lake City the best new ideas exchanged at the NAHB Trade Secrets meetings.

His troubles started at the bottom—the foundation. Salt Lake City's code permits slabs without perimeter footings if the soil is of a certain compactness. Four successful tests had been made in the subdivision, but when Brockbank submitted his plans, the building department demanded that a test be made of every single lot, a cost impossibility.

Brockbank then wanted to use the crawl space as a heating chamber, a feature of the first "Trade Secrets" meeting (Dec. issue '51), but was turned down by the city heating engineer be-

cause it was not approved by National Fire Underwriters. He then turned to a warm-air system with economical 3" ducts. This was approved, then disapproved in favor of 4" ducts. A third change brought them to 5", and the final plans found Brockbank using the customary, wasteful 7" duct.

He was able to include some improvements suggested by the 1951 Trade Secrets meetings, however. Among them:

- ▶ Storage walls and built-ins made in his own mill, à la Martin Bartling;
- ▶ Roof trusses, with wide (3') overhangs;
- ▶ A simplified plumbing tree, back-to-back plumbing;
- ▶ All windows built up from multiples of one 24" x 36" unit;
- ▶ A floor plan that provided for the addition of a third bedroom at minimum expense and trouble.

## How dry I'm not

Water was named cause of yet another builder headache—exterior paint failures. But a surprise to all was Forest Products' insistence that winter condensation was not guilty of most of the failures, but rather water which had been driven under the siding by capillary action. Experiments are showing that the best paint jobs do not provide a perfect seal, especially when water can keep the entire side of a house wet during a rain and lodge in corners.

**Advice:** Wide overhangs, which shelter siding from all but the heaviest driving rains, offer the best solution as they will reduce capillary water to a minimum.

## More research

Papers on the strength and rigidity of various types of framing and joint nailing brought out these points:

1. The toe-nailed joint, contrary to popular opinion, is an excel-

lent joint and resists both lateral and vertical stress to a high degree if the ends of studs and joists are square and fit the plate well. End nailing is not so strong.

2. For an almost universally liked and efficient floor stiffness, a good rule of thumb is "don't let the deflection exceed 1/360th of the span." More, and customers complain of the "springiness." Less, and the cry is likely to be, "It feels too hard." Glued laminated panels are strongest, but are not adaptable to field gluing and, for many people, give too rigid a floor.

3. Spaced diagonal sheathing will permit 24" o.c. studs, with a lumber saving of approximately a third.\* The diagonal should be a full 45° and extend from top to bottom plate to get full strength. Picture windows interfere seriously with this bracing and cut the strength of the wall.

\* Though FHA will accept this construction, most local codes will not. In addition, spacing and cutting of diagonals takes more time, may eat up any saving.—Ed.

## ROUND TABLE:

**BUILDERS  
KEEP OUT!**  
BY ORDER  
OF THE PLANNING COMMISSION



**Alan Brockbank:** "The success of our warranty program will depend in great measure on the willingness of manufacturers to stand behind the products we guarantee. If we are to guarantee our houses, we must be backed up by the makers of the component parts. And it has to be a stronger statement than the usual, 'If in our opinion, our manufacture was at fault,' which some equipment companies seem to think is enough."

### Excessive improvements

**Al Balch:** "We have all been competing against each other for land and have driven the price of that land out of sight. In addition, the builder is the victim of a constant upgrading of all facilities and improvements by various governmental agencies, which ask for more and more amenities. We are being forced to move out of town, to sections where fewer improvements are demanded."

**Frank Collins:** "We think the solution to high land costs might lie in zoning land for several uses, rather than just residential. We recently bought a 600-acre tract and had 250 acres zoned for industrial use. More and more small communities are looking at industry favorably as a method of broadening the tax base."

**Fred Meagher:** "We're also running into opposition from communities that do not want to see us build within their limits, because of the load that several hundred, or thousand, new families throws on municipal services, especially schools. These communities are trying to zone us right out of their towns with impossible frontage and lot size requirements."

**Al Balch:** "In Seattle, the cost of land has made the \$7,000 house an impossibility."

**Dave Slipper:** "Will our system continue to support the waste of land we have been indulging in, with the present cost of subdivision and municipal improvements? Maybe the answer lies in smaller, not larger lots, and in better design to give us the privacy and feeling of spaciousness we want in our homes."

### Good design builds good will

**John Highland:** "We have not even begun to exploit the good public relations of

a well-designed house. NAHB should drive home to its members that if their product is made superior to that of nonmembers, the public will insist on the better product and all builders will be clamoring to join NAHB. That good design can come from only one source, a good architect who knows builders' problems."

**Herman York:** "We have been using the inquiry system to determine the preferences of the public. Recently, we offered two plans in a nationwide syndication, one with a basement, one without. In spite of the fact that the slab foundation house offered extra storage space to compensate for the lack of below-grade space, and a larger house, 71% of those responding wanted the plan with a basement."

**Ned Cole:** "Good design can never get the acceptance it should have as long as lenders and FHA give the highest valuation to mediocrities that conform to their minimum requirements. We need either an FHA premium for good design or an FHA penalty for bad."

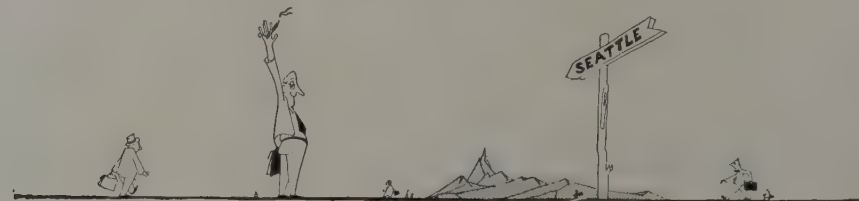
### Homemade houses

**Alan Brockbank:** "Everywhere I go, builders ask me, 'Who's building all the houses? I'm not.' What we are finding out is that a great number of houses are being built by their owners. Some are doing their own work, others are acting as their own contractors. In St. Joseph County, Ind. (South Bend), a survey showed that over half of the houses being built were not being built by a merchant builder. We should be selling this market."

**Floyd Kimbrough:** "There's a problem in educating the public that building their own houses is not cheap. There is nothing more expensive than the board-at-a-time buying of building materials."

### Handyman-owner

**Andy Place:** "We have saved \$50 on our grading and seeding through the use of farming tools and small tractors. All the equipment costs only \$3,000 and it's perfect for the job. We also give a complete kit of small tools to each new homeowner, together with an explanation of how to use them for little repairs that come up during the lifetime of a house. We think this will keep our repair trips to a minimum."







Photos: Damora

## APARTMENT-SIZE HOUSE

LOCATION: Slingerlands, N. Y.

HENRY L. BLATNER, architect

CHARLES WILEY, contractor

GEORGE TEELING, consulting heating engineer

The trim little house you see above is essentially a one-room studio-apartment set down in three acres of pine woods. What sets it apart from either the average apartment or small house is the way it:

- ▶ handles space to make 850 sq. ft. look a lot more;
- ▶ provides for growing larger gracefully;
- ▶ counters the climate the year round;
- ▶ points up the difference between a small house on a big plan and a small house with big-house pretensions.

### Space intact

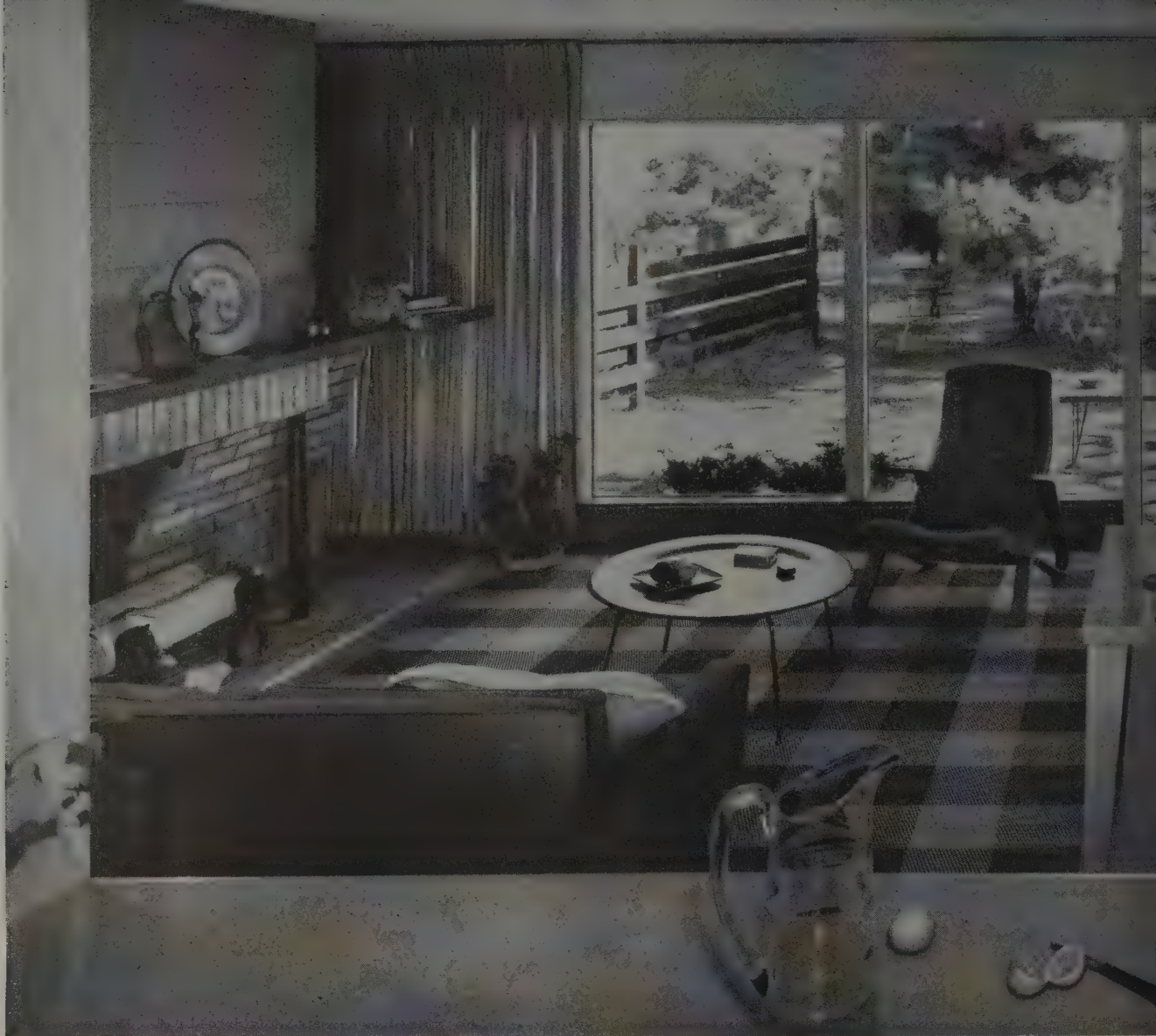
Architect Henry L. Blatner did not constrict the small space further by hashing it into tiny rooms. Instead he opened up the whole house except the bath and utility rooms (*plan p. 132*). These two he shoved into corners flanking the open kitchen to complete a 9'-wide service block. The rest of the house is subdivided only by a couch, two storage units and a partial partition. Couch and

coat closet establish a foyer while the storage wall sets off the sleeping area and deflects the eye away from the bathroom. The abbreviated partition screens the dirty-dishes section of the kitchen. Because of this arrangement, there are only two doors in the whole house and wherever you stand, you sense its full extent.

### Room to grow

If and when the owners decide they want more room, they can expand the house without living in sawdust during construction or winding up with a house that has outgrown its services. All the present facilities—bathroom, boiler and kitchen—are ample to serve a two-bedroom house. This is the way the addition would connect up:

- ▶ the west window of the sleeping area would be removed to let you enter a bedroom hall running north and south;
- ▶ the new hall would connect directly with the bathroom through its west window and the present door would be closed off;
- ▶ the living room would then extend across the full 30' width of the present house.



### Year-round comfort

Despite its diminutiveness, this house manages to envelope the daily rounds with more solicitude than the average full-size house even attempts. The Albany area has rousing snow-filled winters and humid summers which a well-tailored heating system and careful design for coolness help to mitigate. For heating, the house has a radiant floor, baseboard radiators under the double-glazed southerly window walls, plus a fireplace to dispense psychological warmth. For summer comfort, the roof is flooded with a heat-reflecting sheet of water and the eaves overhang 2' to 5' as sunshades for the windows. Surrounding pines act as a screen against sun and glare and their color is refreshing. A spot for an exhaust fan was built into the fireplace chimney alongside the flue but natural ventilation has been sufficient to keep hot air from settling in soggy pools.

Except for the window wall the house is made of conventional stud framing sheathed in plywood with battens closing the joints. Beams run north and south spanning from exterior walls to the east-west partitions of the service block. Floors are asphalt tile or exposed colored concrete; walls are plaster, plasterboard or plywood.

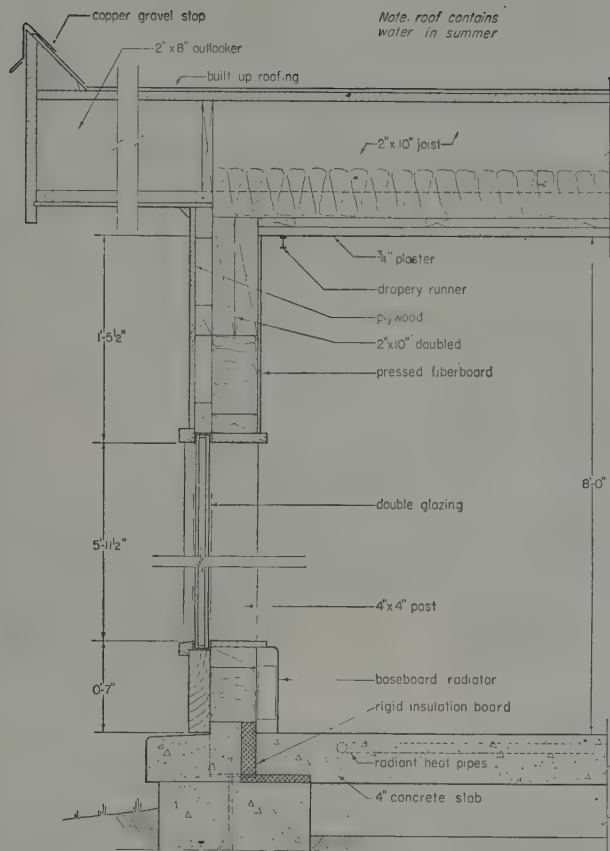






Open serving counter, above, links the kitchen to the living-dining area. Visually, the south wall of the living area isn't in the house at all but consists of a stand of pines, a terrace-width away. Curtains are bright yellow (soft green in the sleeping area).

Birch storage wall, right, with its backing, top photo, squared off in panels of primary red, yellow and blue on a pale blue ground, sets the high color key of the living area. Sleeping area colors are deeper, set off by a mahogany wall.



In addition to radiant coils in the floor slab, there are baseboard radiators which prevent heat loss through the window wall when the sun isn't shining. At the jambs, the fixed double glass butts against a 2" x 1 3/8" strip and is covered by a 1" x 4" trim board acting as a batten.





## Ferryboat house that packs punch beneath a casual cover

LOCATION: San Francisco, Calif.  
 WURSTER, BERNARDI & EMMONS, architects  
 ARTHUR W. BAUM, contractor  
 THOMAS D. CHURCH, landscape architect

This is a deceptively casual house. At first glance it looks like a ferryboat run aground; at second glance it turns out to be as plush as any broker's yacht and full of studied contrasts and well-ordered surprises. It is an almost militant expression of the San Franciscan urge to live well without show. The public apparently likes it for it was one of the most popular houses included in the recent AIA tour of new Bay Region houses.

### Change of pace on a strait-jacket lot

It took some shipshape planning to accommodate the owner's requirements without stacking up rooms in deadly monotony. Space had to be found for a household staff of three, a collection of paintings, 5,000 books and more to come (since bookbinding is the owner's avocation). She also surrounds herself with people, as many as 24 at dinner. Pitted against these demands were the dictates of a site as uncompromising as the worst the city-on-a-slant can offer: long and narrow, it drops off sharply in two directions but is accessible from three sides and has an incom-

parable harbor view. The architects, Wurster, Bernardi & Emmons, might have fanned out the rooms along the arc of the street corner and connected them to corridors running along the blank side of the house on the two main floors. Instead, they chose to alternate the location of the halls (sacrificing 34' of street-side exposure) and therein lies the surprising variety (as well as the complex top-lighting) you find within the house:

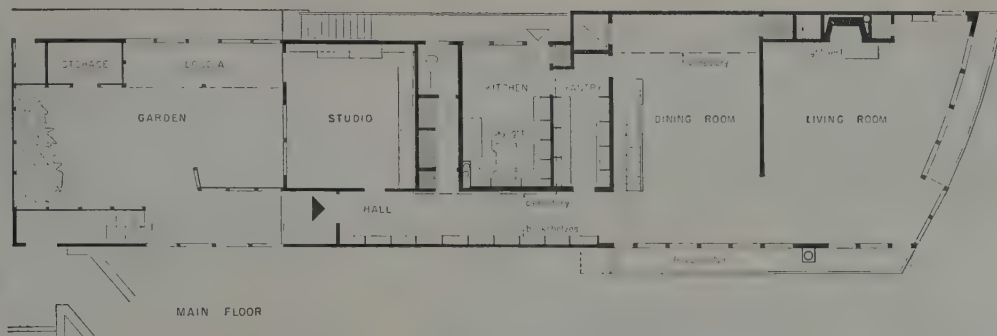
—The living room is entered along the window wall, enjoys the full arc of the 90° view, but also has two solid walls creating a fireside corner

—The owner's bedroom, directly below, reverses the living-room arrangement, is entered from the closed side and encompasses both fireplace and view in one field of focus;

—The dining room concentrates on the bounties of the table by withdrawing ten feet from the view;

—The studio lives in isolation with its private garden but even here the opaque glass garden screen has one transparent square framing a glancing view alongside the next house.





*The living room, left, divides its focus between the teak and marble sitting area and the harbor view. Beth Armstrong was the decorator.*

*The top floor, above, foregoes 34' of easterly exposure for the sake of a dramatic entrance hall. Clerestories help balance light in studio and dining room, are the sole source of daylight in hall and pantry.*



*Below, instances of apparent nonchalance: the random-spaced porthole windows; the fireplace bricks on corner of the balcony; the unconcealed chimney flue and drainpipe; the cantilevered porch beside the garage door. Try doing them otherwise, and they begin to make sense.*

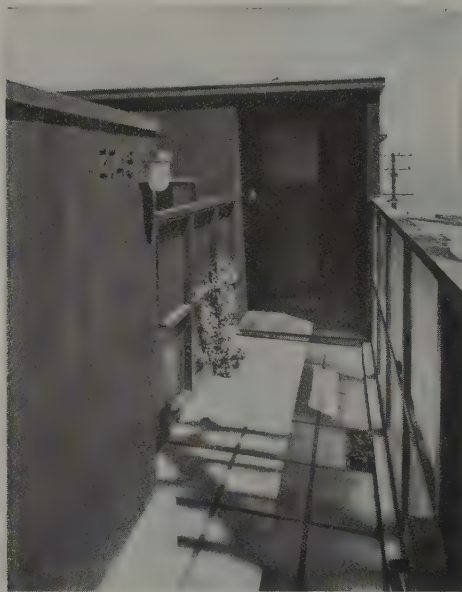
*Stepping down the 20° hillside (plan above), bedrooms are on the floor below the entrance, garage and cook's rooms are on next floor down, and the lowest level is unfinished.*

*Photos: Roger Sturtevant*





*From the street above,  
the house looks like a modest flatboat  
docked in the harbor.*



*At the front entrance,  
a concrete gangplank affords a last harbor glimpse  
and leads you toward the unassuming front door.*

*Inside, a teak-walled, top-lighted corridor  
propels you past 35' of books  
toward the living room and the view.*

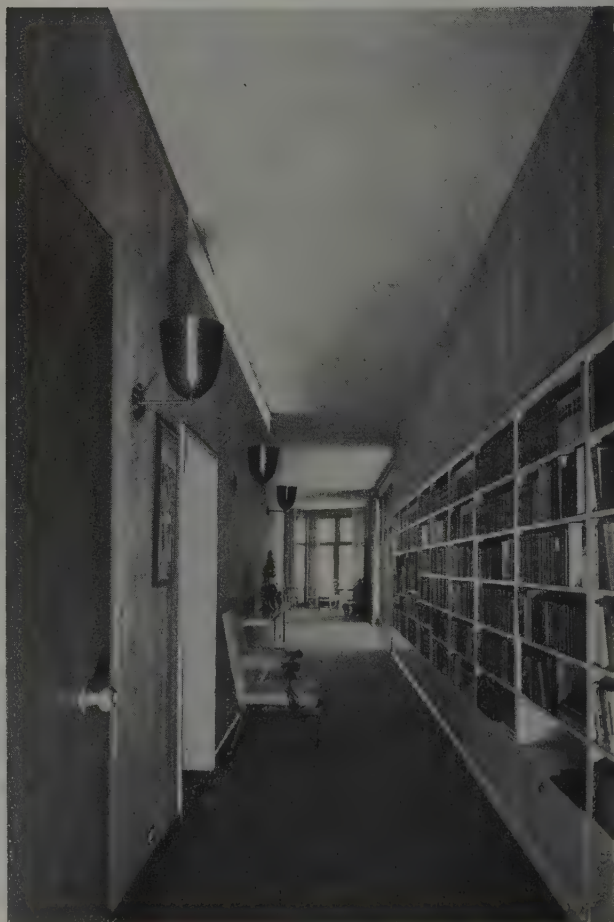
### Telescopic view

The Wurster team, past masters at milking a view, were not satisfied merely to present the view in four ways; they wanted it to be a recurring wonder every time you enter the house. This they achieved by plotting a progression of experiences whose cumulative effect is similar to boarding the ferryboat which the house resembles:

- ▶ Strolling downhill toward the house, the harbor itself introduces the motion picture in which you will supply the motion.
- ▶ At the gate, a concrete gangplank (which takes you off the hill into the top floor of the house) affords a last look at the water as you approach the door.
- ▶ From the front door, a long, book-lined passageway scoots you down toward the light at the far end.
- ▶ Where the corridor opens up, you burst out into the light and onto a decklike living area with the city and bay spread out at your feet.
- ▶ Beyond the window walls, narrow balconies afford a ship's rail view down the dark hull of the building to the street 30' below.

### Sky windows

The telescopic approach was secured at the cost of compounding the existing lighting problem in a house where arbitrary lot lines determine the perimeter walls. The top-lighting used here is as impressive for its extent as for its ingenuity. The section on page 138 (plus plans, page 135) shows how six different rooms in the house obtain light from the sky. *(Continued on page 139).*







*At the end of the telescopic hall,  
you emerge into the view  
which spreads out at your feet in a 90° arc.*



*In contrast to the high, wide and handsome view which dominates the living area, the studio opens on a secluded garden, above. Note opaque glass screen which masks out all but one unobstructed glimpse of the harbor visible past adjacent buildings.*

*The studio, below, is a spare, high room with clerestory lighting to the north and a pleasant, undistracting view south.*



*The house navigates the 20° slope in four levels.*

*On the top floor, the studio, hall and pantry reach 3' to 4' above the 8' kitchen for added light. The kitchen has a flat skylight at the deep end.*



## Contrasts and surprises

A possible explanation for the anomalous quality of this house may be that it isn't a town house at all but a country house making the best of city lot restrictions. Its breezy nonchalance could more generally be associated with the wider spaces outside San Francisco which are dotted with examples of Wurster's prodigious output of houses. But if it lacks urban polish, it certainly has no lack of character. Moreover, it is an eminently livable house and has a number of pleasant contrasts and surprises. The contrasts run to black-and-white extremes: the dark-stained redwood siding against a fog-white sky; the total openness of the half the house related to the essential solidity of the rest; the high exterior versus the lavish interiors. The surprises, appropriately enough, turn up in the most unexpected forms and places:

Both the dining room and kitchen have a window wall on one side, a skylight on the other—but in reverse order; floors in the living area are hidden by hand-woven carpets but the rooms have exposed flooring nonetheless—on the walls; the book wall of the living room has a hole in it forming a 4' x 4' porthole to the view; the lacy, studded balcony rail turns out to be plain iron mesh mounted on with pipe spacers, square washers and wing nuts.



*In the dining room, light and view are separate: a clerestory, above, admits light but no view; the window wall, 10' back of the table, affords a view but little direct light. Gold and black chairs, below, set off teakwood walls.*





VICTOR GRUEN, architect  
LARRY SMITH & CO., economic consultants

## TWO-LEVEL SHOPPING CENTER

**Architect Victor Gruen brings the principles of the large regional center  
to a medium-sized project for a farsighted land developer**

For 13 years, architect Victor Gruen has concentrated on retail store design, with projects ranging in size from small single shops (AF, July '52) to mammoth regional centers, such as the Eastland and Northland projects for Detroit's J. L. Hudson Co. (Aug. '50 issue). His newest project—in the medium-sized field—is the Woodlawn shopping center, in Wichita, Kan.

When Wheeler Kelly Hagny Trust Co. began to develop large tracts of residential land for builders in Wichita's east side, they planned to build a shopping center when the city's growth demanded one. For this purpose they providentially set aside a pie-shaped 25-acre site at the intersection of two major traffic arteries, a space that was thought needlessly large at that time. But when architect Gruen was called in to plan Woodlawn shopping center this year, he found that the sales potential was greater than had been anticipated.

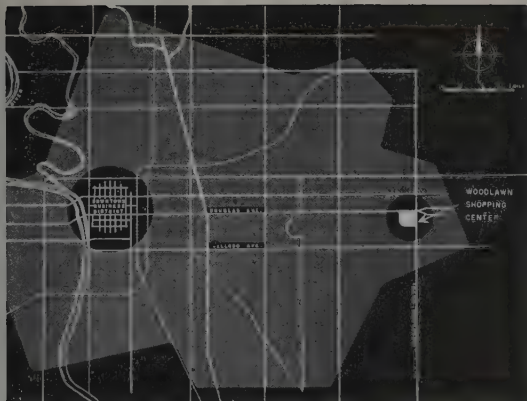
This left him with a twofold and very typical problem: first, to realize full sales potential today, yet leave room for possible growth tomorrow; second, to give rein to all of Gruen's planning principles for a successful shopping center:

- ▶ an arrangement of stores that provides the greatest interplay between them;
- ▶ minimum walking distances, both within and without the store complex;
- ▶ elimination of any poor store locations or awkward, isolated parking locations;
- ▶ separation of foot and auto traffic and provision for unobtrusive service facilities;
- ▶ an architecturally unified building group;
- ▶ efficient operation;
- ▶ above all, the creation of a "shopping atmosphere" offering customers beauty, comfort, relaxation.

To double the use of the ground, Gruen put his center on two floor levels; and to make the two levels economical, he availed himself of the cheapness of bulldozing, especially on a site with a 13' difference of grade. Parking on the high western side is at second-floor level and on the low eastern side at first-floor level. Customers, when once familiar with the layout, will do a minimum of stair and ramp climbing.

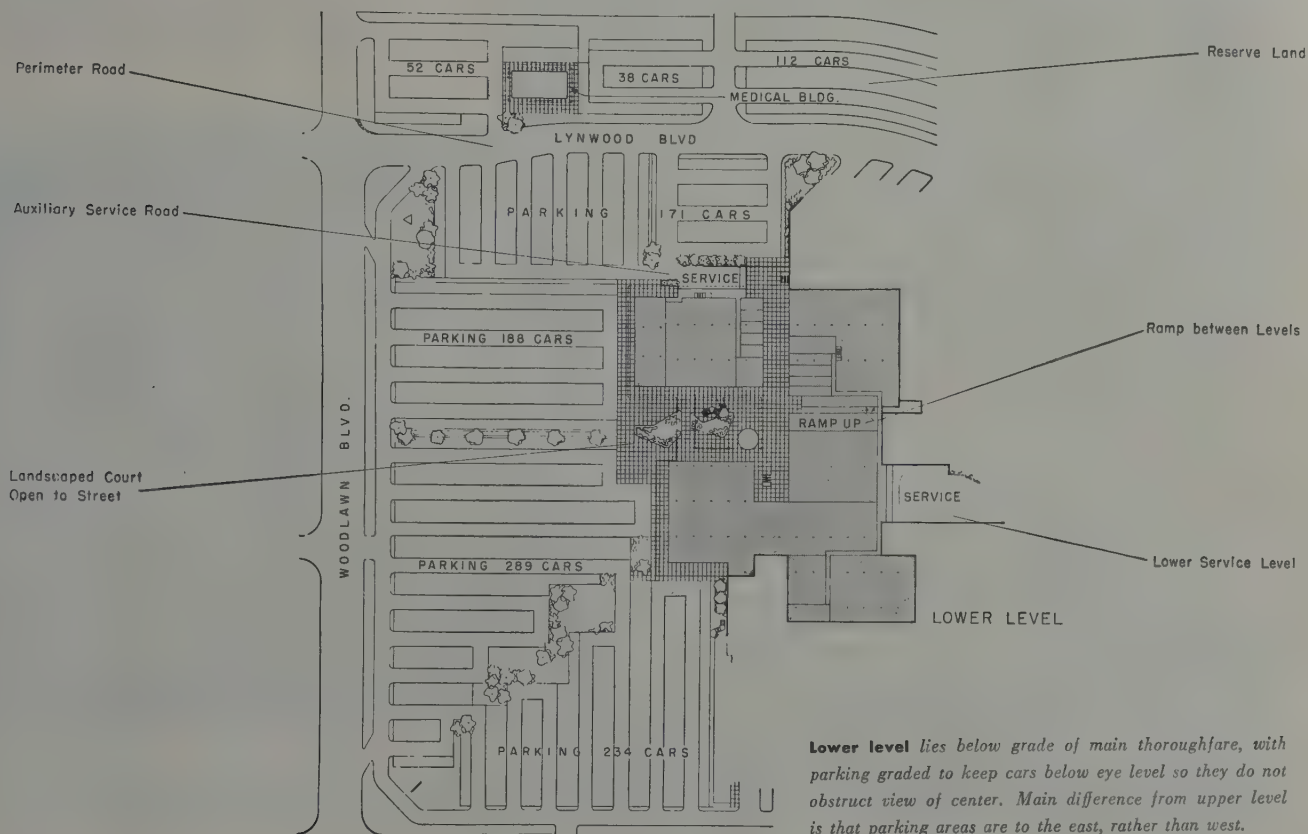
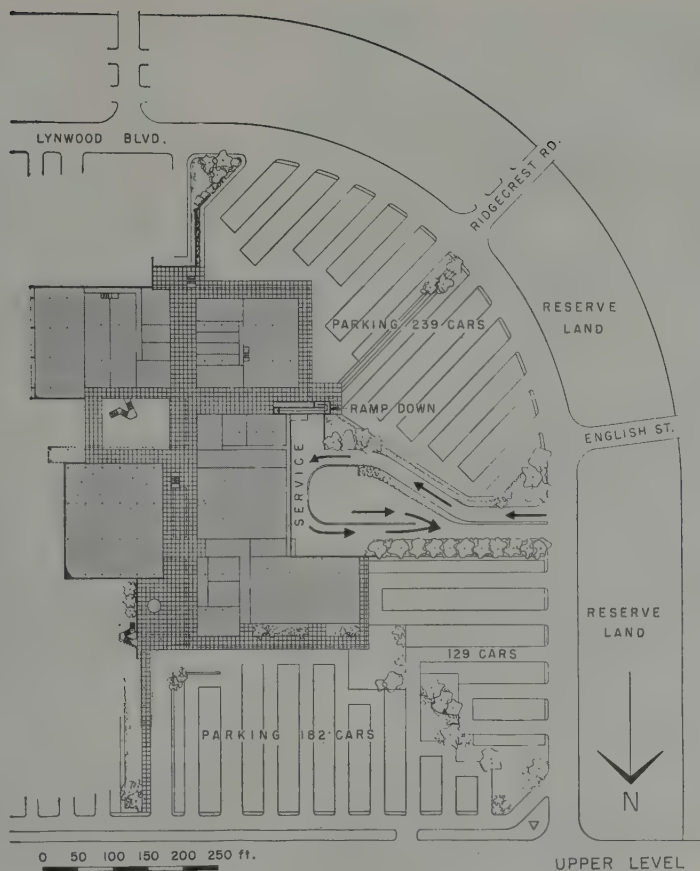
The center is of Gruen's so-called "cluster" type which means





Woodlawn's 25 acres, situated just within the present city limits, are in heart of Wichita's most rapidly growing residential area and face main road leading from this area to present downtown shopping facilities.

Upper level is several feet above grade of curved perimeter road. Parking lot slopes up to store-front line, increasing visibility from main arteries. Landscaped court is open on one side, with upper-level stores forming two sides and major department store, the fourth. Covered arcade leads from parking areas and bus stop past stores and onto shopping balconies around court.



Lower level lies below grade of main thoroughfare, with parking graded to keep cars below eye level so they do not obstruct view of center. Main difference from upper level is that parking areas are to the east, rather than west.



**View from lower level** shows shopping balconies serving upper level stores. Ramp and stairs at strategic points connect the two levels and parking areas. (Name was changed from "The Village" to "Woodlawn" after sketches were drawn.)

that customers are sucked past or through smaller stores at the periphery on their way to the big store in the middle, giving the smaller stores maximum sales opportunity. (This differs from the famous Framingham plan where the two main department stores are at the two ends of a mall, with the small stores strung out between them.) The "cluster" is carefully organized to favor the best approaches.

Gruen's economical bulldozer technique, applied to a two-level scheme, gave him the added advantage of high visibility in relatively flat country. The two-story height is visible from everywhere around, and Gruen artfully disposed the parking lots so as not to interfere with the view.

Because this two-level scheme in effect puts the store basements up on the ground, it gives merchants a wide range of choice in store layout: they can take one- or two-level selling space or make any combination between selling and storage levels.

Goods' entry has often had less attention than customer entry, (resulting in traffic tangles), or has been solved by expensive tunnels to put goods' entry out of sight. At Woodlawn, trucks have a separate entrance at the upper-level service yard, and all trucks drive one way through the same loop to avoid cross traffic. Trucks serving the upper level stop there at docks; the others continue on past and onto a ramp to the lower level where a single receiving dock is connected with virtually every store. All trucks then exit at the lower level.



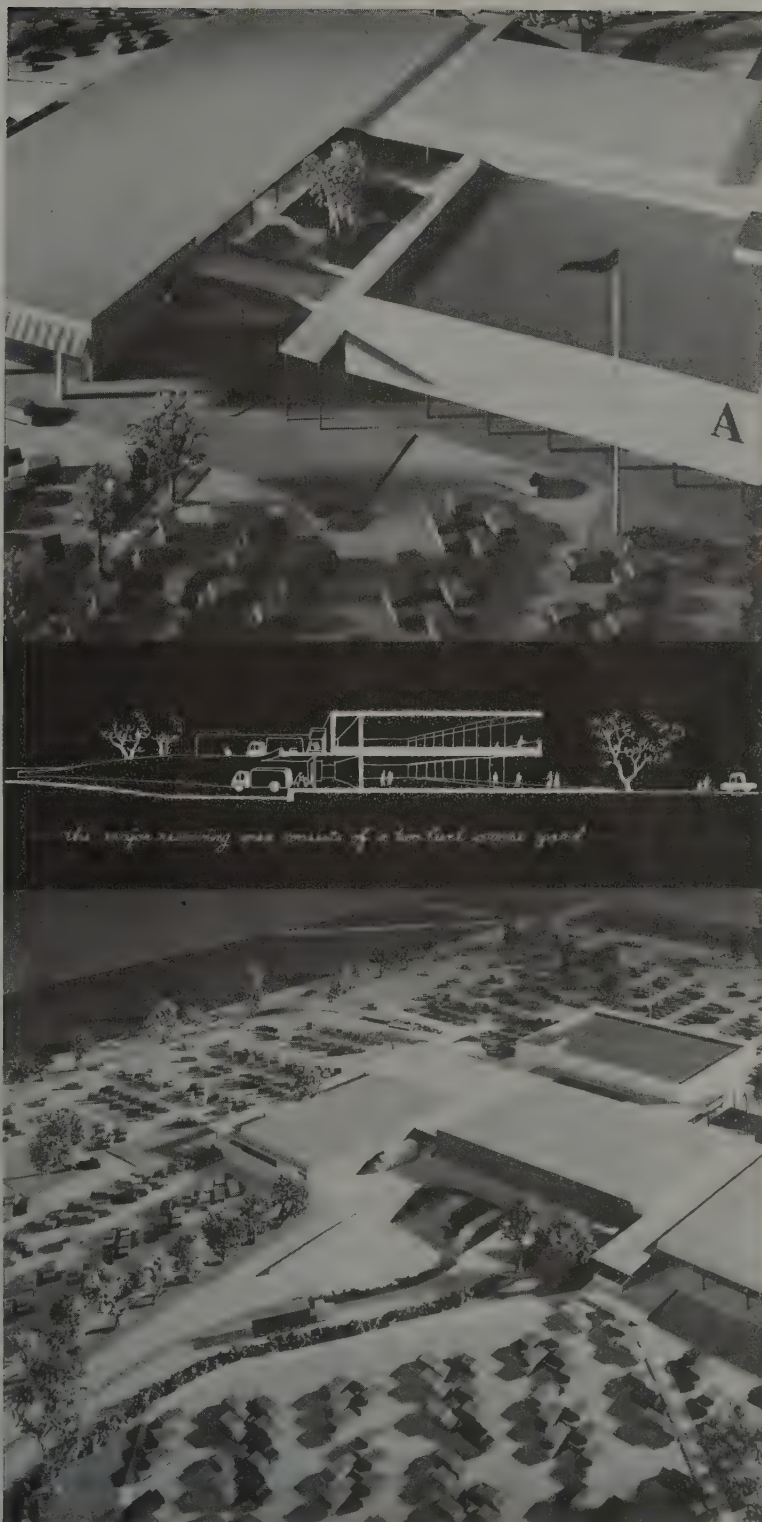
**Woodlawn's buffer zone** around two sides of project provides overflow and employee parking, acts as a protective zone for adjacent residential areas and forms a reserve for future expansion.



**Double level sales area** makes maximum use of land. With ample parking provided for each level through natural slope of the site, shopping activity is concentrated, walking distances minimized and extremely close interplay between stores and stores, and stores and parking achieved. Total rentable floor area is 206,200 sq. ft., almost equally divided between two levels. Wichita now has no major shopping center outside downtown area though the population increased 142% between 1940-50, and is still growing.

**Twin receiving docks** take up no more ground space than single facilities, permit serving both levels at one time. Dock at lower level leads to an internal service corridor which connects with most stores.

**Service yard** is completely divorced from parking-lot traffic, as is truck entry and exit. Planting areas and landscaping serve as dividers between parking-area segments and furnish shade. Parking ratio is set at 7.9 cars per 1,000 sq. ft. of rental area by Gruen's yardstick that each parking stall will bring in between \$8,000 and \$12,000 sales per year and that the parking needed can best be determined by an expert estimate of the center's probable gross volume, adjusted by local modifying factors.



# "Revolution" in lumber—cheap, strong hardboards are among

new products made from yesterday's waste

*The lumber industry has done in a few short months what it took the meat-packing industry years to accomplish: use the waste material previously thrown away in the production process. Pork packers have long claimed that they use "everything but the pig's squeal." Now lumbermen go them one better, claim use of "everything, including the bark."*

The hectic scramble to utilize wood waste has aroused national interest through new products that have started to enter the market: hardboard made from pressed wood chips, new cellulose goods and such implausible-sounding confections as "wooden" sugar and "wooden" molasses.

Of the many new items, the hardboard has been described as the lumber industry's most outstanding development in 30 years. NAHB reports it thus on a list of eight "sparkling discoveries" in new homebuilding products: "laminated wood paneling fused under heat and pressure from wood flakes and chips; a veneer stronger than most wood at less cost than plywood; handles easily, holds nails and screws near the edge without splitting" (see below).

The potential for wood-waste utilization is enormous. The West Coast industry, which supplies a quarter of the nation's forest products and a third of its lumber, cut 12 billion bd. ft. of lumber last year. This indicates a waste, under "old-style" logging methods, of at least 5 billion bd. ft. of wood (or "cellulose," as the wood chemists call it).

Already an estimated 20% of this waste is being used through two methods, chemical and physical.

**Chemical**—Oregon Wood Chemical Co. at Springfield, Ore. is the No. 1 example. Started as a private enterprise last year (after experimentation as a pilot plant under industry sponsorship), it uses nothing but wood chips from neighboring sawmills. Hillman Lueddemann, president of the West Coast Lumbermen's Assn., proudly passes out sample bottles of sugar from this plant. Tasters say the Cubans had best look to their laurels; it's good sugar—a by-product from the manufacture of alcohol. Oregon Wood Chemical's other products include 5%-sugar, acetic acid, lignin, wax, alcohol and molasses. (Oregon State College experiment station has brought hogs and cattle through an entire season on cattle feed made with this

"wooden molasses," and the station reports that the cattle "fattened beautifully.")

Also on the chemical side, Rayonier Co. is a good example of what's doing in cellulose. It shipped 355,000 tons last year from three Washington plants—the equivalent of a 40-car railroad train every day of the year. Major customers: du Pont, Hercules, Celanese, Eastman.

This cellulose pulp, like many other wood-waste developments, has been known for many years, but has been filed on a back shelf waiting for the time when it was feasible to produce in commercial quantities. Rayonier's cellulose now finds its way into rayon tire cord, high-pressure hose, belting, parachutes, cellophane, photographic film and paper, noninflammable movie film, X-ray film, yarn, rugs, curtains, clothing, upholstery, braid and a thousand other articles.

Another new development, now in the market research stage, is utilization of the waste sulphite liquor from pulp mills, which amounts to as much as 50% of the log and is a river pollution menace. It has been broken into chemical components used in adhesives, heart nutrient, linoleum paste and even vanilla.

**Physical**—Of greatest interest to the homebuilding industry are the two wood-waste materials manufactured mechanically: hardboard and bark products.

Hardboard is beginning to throw a scare into the plywood industry, especially with high quality "peeler" logs growing scarcer. Owners of 43 plywood mills in California, Oregon, Washington, British Columbia and Alaska are a little worried about what the new product may do to them when it really gets into production in the 18 hardboard plants planned, building or operating in British Columbia, Oregon and Washington.

In these plants, chips are steam-cooked in big kettles to soften the resin, then dumped into "defibrators" that chew them into component wood fibers. After further refining in a "pulper" they are formed into a blanket on a Fourdrinier machine, as in paper mills, molded in a hot press as in plywood manufacture, trimmed and sent to market as "wet-formed" hardboard. Among its uses: furniture, store fixtures, subfloors, exterior siding, door panels, countertops.

Recently some companies have used even the sawdust and shavings, bonding them under pressure with synthetic resin in "dry-formed" boards. High cost and short supply of resin has limited production, however. Other fertile fields now being expanded are those of fire-resistant and decay-resistant hardboards. Newest product of the Douglas Fir Institute is a resin-bonded sandwich of low-grade plywood faced on both sides with hardboard.

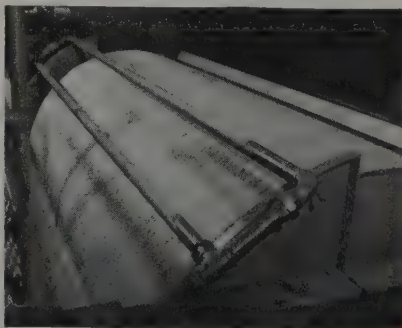
Forest Fiber Products Co. at Forest Grove, Wash., one of the first plants to get started four years ago, runs its hardboard through a planer for exact thickness. It also makes an extra-hard board called "Plyron" which is used as the outer layer of plywood panels for kitchen cabinets and other surfaces where a tough, smooth finish is required. And it has just announced the industry's first tongue-and-groove hardboard, made in 16' x 8' sheets, which it believes will outclass other materials in ease of handling, sawing and nailing.

First hardboard plant to use wood waste completely, including the bark, was started this summer by the Oregon Lumber Co. at Dee, Ore.

Besides hardboard, the biggest mechanical utilizer of wood waste is a new bark mill at Longview, Wash. built by Weyer-

(Continued on page 146)

*Pulped wood being formed into sheets*



Photos: Condit Studio; Leonard Delano Studio

*The finished building product*





# Car Housing at its best—



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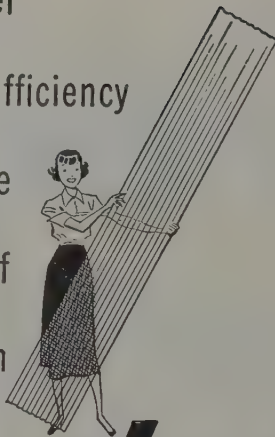
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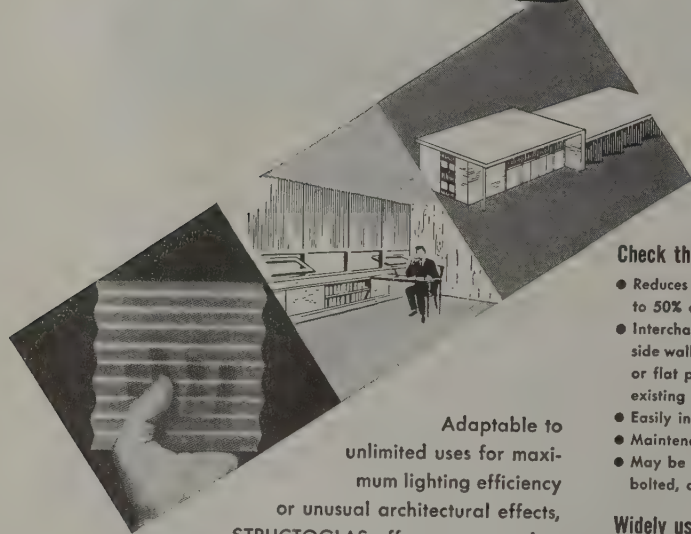
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HH-9

## REVOLUTION IN LUMBER

haeuser, big gun of US lumber. This plan now out of the pilot stage, uses only Douglas fir bark which is removed by hydraulic barkers at its sawmill and plywood plant (about 200 tons of it from every 800,000 bd. ft. sawn). In a pounding din of hammer and ball mills, screens and shakers the bark is reduced to powder and shreds which become the basic ingredients for cork substitutes, molding compounds, flooring, adhesives, cements, fertilizer, explosives, oil-well drilling mud, shoe soles, phonograph records, ash trays, peat-moss substitutes and many plastics.

Fundamental economics behind the recent growth of wood-waste uses center around the price of logs vs. scrap. Hardboard, chemical and pulp manufacturers are currently paying only \$6 per unit (equivalent to about 500 bd. ft. of wood) for chips at the sawmill, compared to \$40 and \$50 for nos. 3 and 2 logs. Unit cost to sawmill operators for chipping is \$2.50 giving them a profit of \$3.50 for material that formerly was burned for power or discarded. Sawmills in the Oregon-Washington Douglas fir region now sell 1.2 billion bd. ft. worth of chips annually in the process of cutting 12 billion bd. ft. of actual lumber. Sawmills are even hauling in rotten logs and feeding them to the chippers after discovering that they make just as good kraft paper as healthy timber.

### Wood chips are blue chips

Why this sudden coming-to-life in the industry? These three main reasons help to explain the rush:

1. Expiration of a major manufacturer's patents for making wood-chip hardboard has left the market wide open.

2. Eastern capital (among the first: Container Corp. of America) saw gold in the waste sawdust piles.

3. A chemical-process plant (Oregon Wood Chemical) got off the industry's payroll, on its own feet as a private enterprise to lead the way making alcohol, sugar, etc.

Right now there is more demand for chips and pulp than there is for lumber, and the forest of the future may be measured in cubic feet as well as board feet, as tree farmers are already doing. Effect of the "revolution": lumbermen are streamlining their industry, saving much of the 34.5% of timber heretofore completely lost and the 22.5% used as fuel for lumbering operations. Millions have been invested in new installations: 18 hardboard plants, 12 new pulp and paper mills, 16 new sawmills and chemical plants. For the building industry: better, cheaper products.

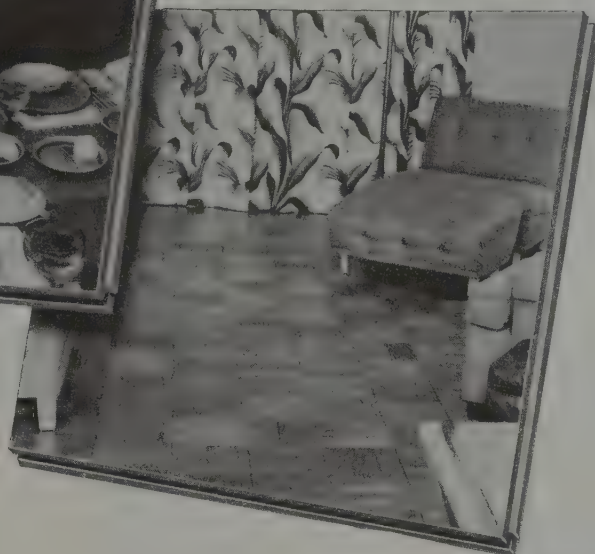


# PRIZEWINNERS WIN CUSTOMERS...



## ◀ Wins Parents' Magazine "Merit Award"

Note how Higgins Bonded Hardwood Block Flooring underscores a look of quality which helped win a *Parents' Magazine* Merit Award for this home by Hollin Hills, Inc., in Alexandria, Va. The mellow oak surface blends perfectly with contemporary or period design.



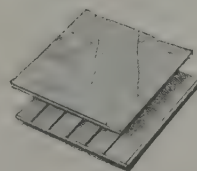
## Wins Practical Builder "Oscar" ▶

Typical interior of Gentilly Woods homes in New Orleans, which won builder Crawford a *Practical Builder* "Oscar." Many of the 1,065 homes have Higgins Bonded Hardwood Block Flooring—the choice of customers who wanted a quiet, comfortable floor, easy to keep looking beautiful, year after year.

## ... CUSTOMERS PRIZE HIGGINS BONDED HARDWOOD BLOCK FLOORING

More and more merchant builders are finding that the rich, distinctive good looks and practical advantages of *Higgins Floors* help sell homes. The specifications show why:

- 3-ply cross-grain construction—comes with final finish
- Selected oak face—beauty that adds distinction
- Pressure bonded with marine-type glue—water-repellent, climate-proof
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- When properly installed will not warp, buckle, cup or crack
- Grooved back anchors into adhesive—quiet and comfortable



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City.....Zone.....State.....

## WASTEFUL WAYS

Sirs:

On page 33 (H&H, July '52) the following statement is made with reference to the recommendations of the President's Materials Policy Commission: "Therefore, unless the industry mends its wasteful ways, turns from relatively 'scarce' materials like copper, lead, zinc and lumber to more plentiful substitutes like aluminum, plastics, glass, asphalt, gypsum and concrete, it will add importantly and needlessly to US raw materials problems."

The American lumber industry cannot agree with the Commission's finding that lumber is "relatively scarce." Despite the huge volume of timber removed for use since the birth of our nation, our forests, under wise industry management, continue to yield crops of sawlogs for lumber. Today, there is enough saw-timber standing in the nation's forests to build a six-room house for every man, woman and child in the US with a substantial amount of lumber left over.

Even more important: reduction of waste in lumber use has progressed to the point where modern mills are utilizing up to 70% of the log, as compared with 30% to 40% in former years. This is a conservation measure equal in its effect to many years of tree growth. Add to this the fact that more than 3,700 tree farm units in 34 states, totaling more than 26,000,000 acres of private land, have been dedicated by their owners to the production of continuous crops of trees. This industry-sponsored program to encourage the growing of timber as a crop, the rapid advances in protection from fire, insects, and disease, the new technological advances, improved milling practices, and continuing research assure the lumber industry's ability to continue to meet America's demands for lumber and lumber products.

There has never been a shortage of lumber in this country; there is no shortage today; and there seems little prospect of a shortage in the foreseeable future.

LEO V. BODINE, *exec. vice president*  
National Lumber Manufacturers Association  
Washington 6, D. C.

## AIR CONDITIONING

Sirs:

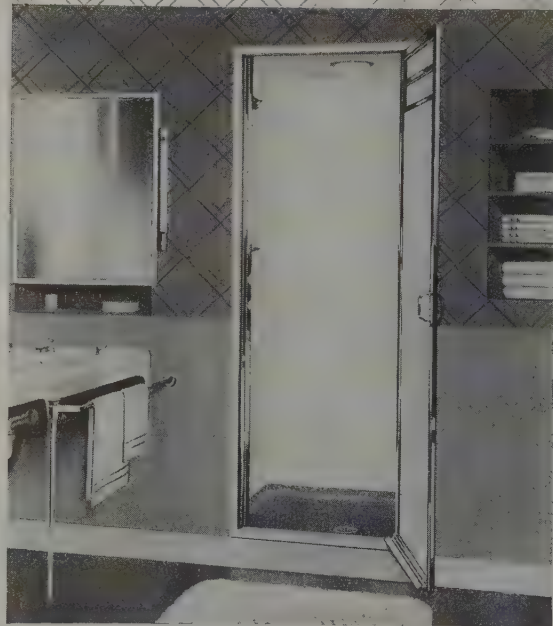
Have read with much interest in June HOUSE HOME about residential air conditioning in the US, including your round table.

No doubt about air conditioning becoming an integral part of the house—like the bathroom. Installed air conditioning is, or will be shortly, as essential as "inside" plumbing.

Your round table gave the builders' needs—it is now up to the manufacturers to supply air conditioning units at the right prices. This, we know, is possible through American industrial "know-how." If it is not forthcoming immediately, the manufacturers alone must shoulder the

**save labor**

**build in more value  
with FIAT  
"package" showers**



Illustrated: The CADET, a built-in Fiat Shower that does not look like steel, but becomes a beautiful part of the bathroom by concealing joint between wall and cabinet stiles.

See Sweets:

25c Architectural  
FI

7b Builders  
FI

or write for catalog and prices.

■ 8% to 10% of the average home cost is in the plumbing contract—much of that goes into the bathroom! Now you can reduce that percentage and still deliver adequate and attractive bathing facilities by utilizing FIAT "package" showers. FIAT shower cabinets are designed to meet every architectural requirement, and always cost substantially less than built-on-the-job showers.

You save time, cost and confusion because a FIAT shower may be installed complete by a single tradesman! The plumber quickly assembles the FIAT cabinet, and fits it to the precast Terrazzo Receptor right while he is setting the drain. Shower head and valves (included in package) are connected at the same time. Sound simple? It really is!

### MORE ARCHITECTS PREFER FIAT SHOWERS because:

all FIAT cabinets are rust-proof—always made of bonderized, galvanized steel; never affected by building settlement; don't depend on mortar joints for water-tightness; Terrazzo Receptors are permanently leakproof—eliminates lead pan and double drainage arrangements; deliver more quality for less money.



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blame . . . because it is sometimes considered "unprofitable" (immediately) by big business (manufacturers) who profit unduly by keeping unit costs up and stifle progressive ingenuity with resulting benefits.

CARL KAMRATH, *Architect*  
Houston, Tex.

## FRAMING FOR STOCK PARTS

Sirs:

Congratulations to Mr. Johansen on an excellent use of millwork and framing (H&H, June '52). The cost savings resulting from this type of residential construction have proved to be equally impressive here (San Antonio) where I have been using the same principal both in individual residences and merchant builder houses.

The striking similarity between the Johansen frame and the frame used by my office is not particularly startling since they are both the result of fitting stock parts (doors and windows) to a wood frame also using stock members (2 x 4 and 4 x 4). Obviously the resultant union would have to conform to the shapes and sizes of the stock parts.

My frame has one fairly noteworthy difference from Johansen's, namely the center dimension is 2½" and the rebate 1⅞" making a total of 6¼". In small quantities this size must still be milled from 2" x 8"s, but in large quantities rough lumber is used and the waste eliminated. The reason for the 2½" dimension is to allow the frame to fit any ordinary stud wall without furring, and with a 1⅞" rebate to prevent imperfections or warping from revealing themselves.

I have used this frame successfully with aluminum, and wood-awning windows, steel-casement windows, cement asbestos and plywood panels, fixed glass (single, but double glazing would work equally well), interior and exterior doors.

The horizontal frame section may be necessary in Conn., but in San Antonio the one symmetrical member is suitable horizontally and vertically.

WALLACE B. THOMAS, *AIA*  
San Antonio, Tex.

## APOLOGIES TO ST. PAUL

Sirs:

In HOUSE & HOME June '52 you note "Harold Stassen lives now in Philadelphia, but still owns this house in Minneapolis, Minn." Harold Stassen's home which you picture is at 744 Stewart Lane in south St. Paul, Minn.

I know that you are always interested in accuracy in your publication and we are quite proud of the fact that Harold Stassen has for years made his residence in south St. Paul. To the best of my knowledge he has never maintained a residence in Minneapolis at any time.

Incidentally, I enjoy reading your magazine very much.

J. PETER DEVINE, *Gen. Agent*  
Occidental Life Insurance Co. of Calif.  
St. Paul 1, Minn.

Mr. Devine is right; Harold Stassen's house is in St. Paul.—Ed.

(Continued on page 150)

# GET THE FACTS on the Amazing *Fleetlite* Aluminum WINDOWS



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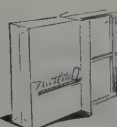
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Sirs:

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I have nothing against modern or ranch style architecture, providing it is well done, per se. But those of us in the "young" age brackets who have a substantial investment in furniture and furnishings that is not modern cannot afford to junk everything. We have to stick to the colonial, etc. styles. . . .

R. J. KREMERS  
Milwaukee, Wis.

Sirs:

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WILLIAM H. MUCHNIC  
Locomotive Fin Natl.  
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Sirs:

HOUSE & HOME permits so many plans of small houses with the bathroom window over the tub. Very bad indeed. I think you should do something about it.

GEROULD T. LANE  
Rochester, N. Y.

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Sirs:

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What I expect from your magazine sooner or later is a design where a hangar replaces the garage next to the house without destroying the looks of the house through its ugliness.

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DR. LOUIS LEONPACHER  
Lafayette, La.

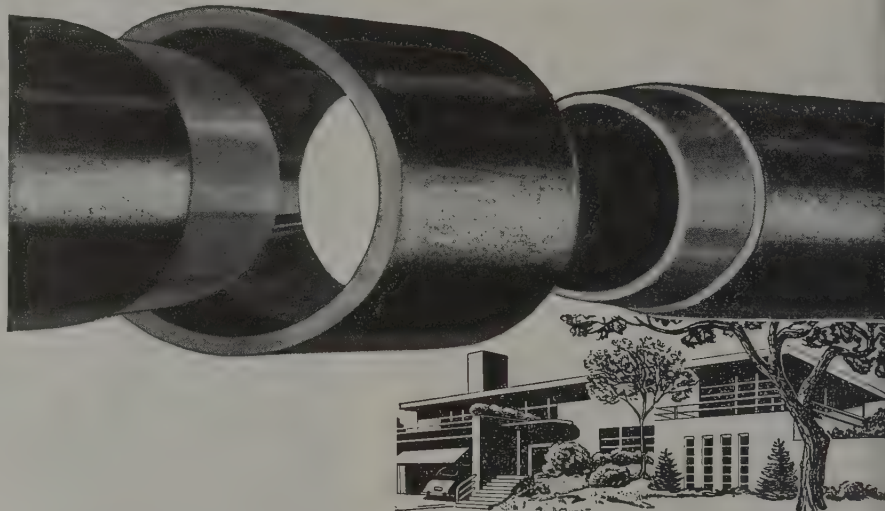
CORBETT'S CONTRACTORS

Sirs:

I was disappointed that you did not mention the contractors who built Mario Corbett's house in Vina, Calif. (H&H, July '52). Heninger and Stover's work is the finest I have seen,

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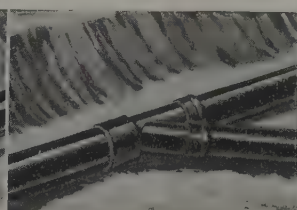
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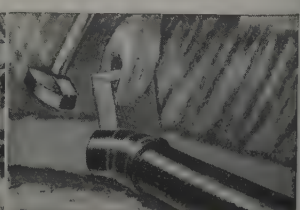
1/4 BEND



WYE CONNECTION

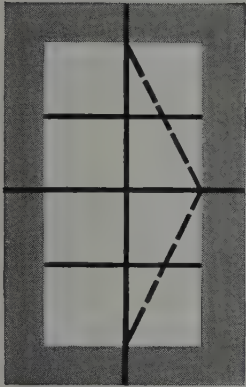


1/8 BEND

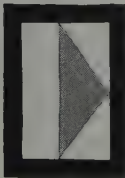


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Esra Stoller—Pictor



*The Organic Approach: Florida Southern College, Lakeland, Fla., Frank Lloyd Wright, architect (left); Residence, Santa Monica, Charles Eames, designer (above).*



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### ART IN MODERN ARCHITECTURE.

Eleanor Bittermann. Reinhold Publishing Co., New York, N. Y. 178 pp. 8 1/2" x 10 1/2". Illus.

"This book is inspired by a certain moment in history—a moment when many architects are turning away from purely architectural forms and are ready to employ the richness of fantasy and imagination that artists have kept to themselves too long." Thus Eleanor Bittermann begins her book.

It is an important book because it is first: the first to survey what has happened to sculptural, mural and glazing art in the industrial building age; the first to capitalize on a current trend toward enriching the stark forms of modern architecture.

Unlike handcraft building of the past, machine architecture did not bring with it an appropriate decorative method, evolving naturally from new structural systems. First came indiscriminate borrowing of past styles; then the complete rejection of applied ornament as architects struggled with basics of structure and form. Functionalism became the sacred cow of modern architecture, purity of undorned line and surface its ideal.

Today, rather wistfully, the architect seeking a new kind of ornamentation, suitable to a machine esthetic. The artist, long relegated to the museum and the monument, again being asked to take an active part in the creation of living architecture. The copious illustrations of this handsome book show that much progress has already been made. They show also that a universally appropriate answer, if there is one, remains to be found. Unfortunately many architects and artists still seem a bit self-conscious in each other's company. A lack of wholeness, a lack of integration between their two aspects of design, are often apparent. A tendency toward the modernistic, the slickly decorative or the fulsomely symbolic are other pitfalls.

The book is limited entirely to American work. This reviewer feels that a more stimulating collection could have been made by choosing only the cream of both American and European designs. For instance, in a discussion of *Art in Modern Architecture* the omission of Lurcat's tapestries and Matisse's Dominican Chapel, with its electrifying stained glass windows and black on white glazed tile murals, leaves a void which cannot be filled.

Nevertheless, the book is a valuable survey of peculiarly American attempts, failures and stimulating successes. It covers our major trends in architectural art for the past 30 years with emphasis on outstanding designs of the most recent past. Divided arbitrarily according to medium, the book includes brief histories of the use of plaster, mosaic, stone, wood, metal, glass, ceramics and fresco in

(Continued on page 164)



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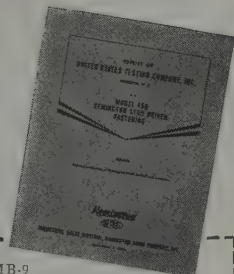
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## REVIEWS

architectural decoration. It also describes new media and techniques—plastic, ethyl silicate, etc.—which give the modern artist his unprecedented freedom of expression. In collecting and cataloging examples of American architectural art, in discussing its roots and its technical potential, Mrs. Bittermann has done a real service. Her book should enable both architect and artist to profit by the experience of earlier attempts, and it should challenge them to a more profound study of the problems to be solved.

Of particular interest are three divergent approaches which this collection reveals. The first and most famous is that of Frank Lloyd Wright: the "organic" decoration which is an integral part of the structure itself. This is well illustrated by the sculptured columns and concrete block details of his Florida Southern College. Unlike many modern architects Wright never rejected decoration, but from the first made it an inseparable part of his structural forms. In large degree this accounts for the richness and warmth which have always been a striking quality of his architecture. According to Wright, "painting and sculpture are not necessary: the building is the painting and sculpture."

In this same category falls the work of Charles Eames, a designer whose industrially based esthetic could not be further removed from that of Wright. In Eames' own house, exterior walls become "murals" through the composition of structural units: panels of glass, plywood, stucco and asbestos, in contrasting textures and colors, separated and unified by the exposed steel frame. The rest is an architectural interpretation of meticulous "constructivist" art.

In opposition to the organic approach is the idea, old but now new again, of collaboration between architect and artist. This would appear to be the current trend as documented by Mrs. Bittermann. Perhaps the outstanding example of such collaboration is found in the sculptured ceiling lights of Isamu Noguchi. For the American Stove Co. building, the S. S. Argentina and TIME-LIFE-FORTUNE-BUILDING information center, Noguchi has executed, in plaster, abstract designs which act dually as light sources and sculpture—the light and shadow emphasizing and dramatizing the sculptural forms. This is no mere applied decoration, but an integral use of art in architecture.

Nonfunctional, but equally well integrated into the total design are the *repoussé* copper door panels executed by Frederic Littman for Pietro Belluschi's Zion Lutheran Church; the gay bronze fishes grouped into a fountain for the UCLA Elementary School (Bernard Rosenthal, sculptor; Robert Alexander, architect); the humorous Steinberg and Miro murals and the Calder mobile for the Terrace Plaza Hotel. Such collaborations prove the tremendous gain which can result from the

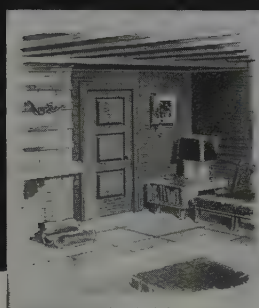
(Continued on page 168)



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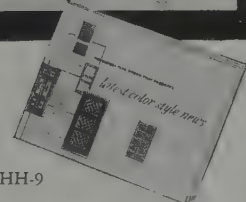
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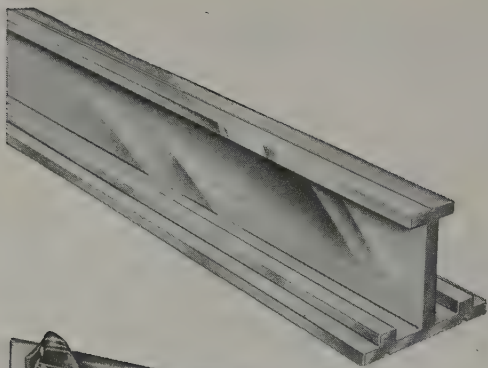
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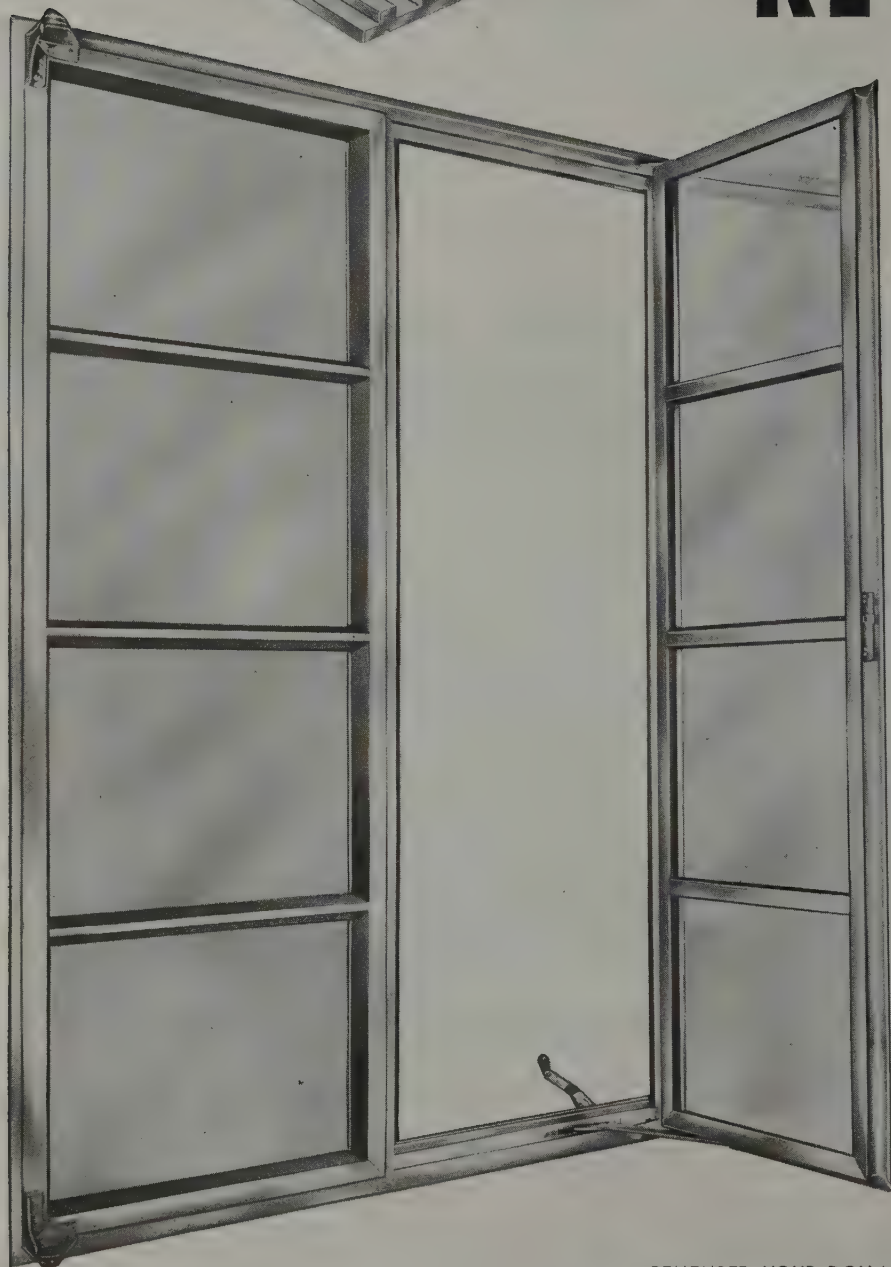
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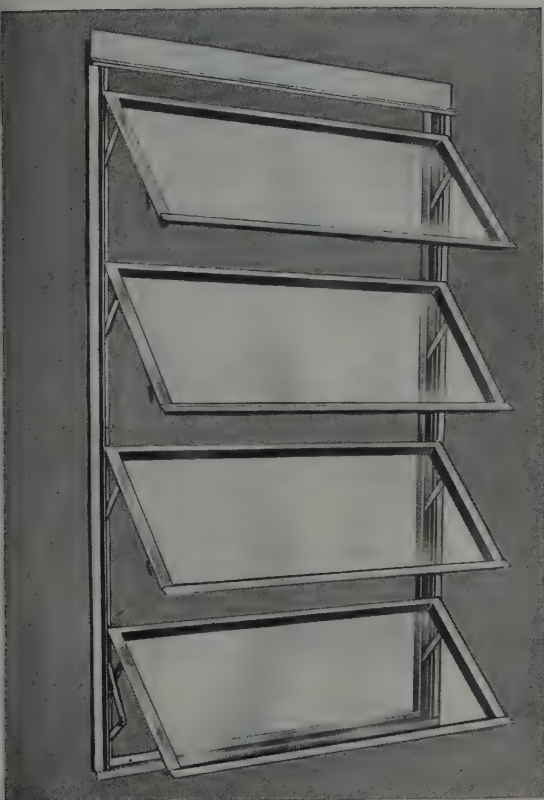
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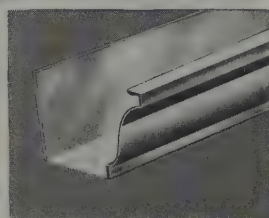
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# ALUMINUM

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interplay of artist and architect on a design problem.

As a proponent of a third approach, Philip Johnson stands alone, at least within the covers of this book. He rejects both the organic and collaborative method, prefers to choose completed sculpture or painting after the building is finished. However his approach is not that of the magpie collector; it is nearer an exhibit technique. His few choices "work" within the design as a whole. Johnson's architecture is precise, machine-like, and, in his own "glass house," almost dematerialized. Here he uses individual works of art to give weight, division or accent as needed. The Poussin painting which echoes the "mural" of surrounding woods seen through his glass walls, acts also as a screening panel between two areas in the open plan. The oversize Nadelman sculpture "weights" the extreme lightness of his predominantly glass house, providing a welcome contrast in texture and contour. Explains Johnson: "If you give sculptors architectural commissions, they often get self-conscious about the space they have to fill and do not always do their best work. Pick the greatest works of art you can, put them in the best place you have, and you get the type of architecture we want in this scientific age."

Throughout her book, Mrs. Bittermann has chosen to let the architect and artist speak for themselves. Most illustrations are accompanied by explanations of the technique and materials used, and the philosophy behind the solution, given in the designers' own words. Thus the book becomes an enlightening collection of the theory and practice of many top-ranking artists and architects.

One could wish, however, for more evaluation from the author herself. The book ends rather abruptly without a resumé of the trends shown. Sides are seldom taken and the future development of architectural art is hardly touched upon. Perhaps the author does not aspire to be a prophet. Perhaps also, this is the wiser course, since the problem lies ultimately in the hands of the architects and artists themselves. —Mary Mix Foley.

**L'ARREDAMENTO MODERNO.** By Roberto Aloi. Editore Ulrico Hoepli, Milano. 410 pp. 9" x 11". Illus. Lire: 6,800

This is a picture book showing what the editor considers to be the most significant examples of European and American interior design of the past few years. The bulk of these examples is taken from Italian work, and it has the imagination and grace which readers of *Domus* have long associated with postwar design in that country. These examples also represent a certain point of view, and this point of view—an attitude to design made up of one part love-of-handicrafts, one part love-of-tradition, one part love-of-free-form and one part love-of-Eames—tends to

(Continued on page 172)



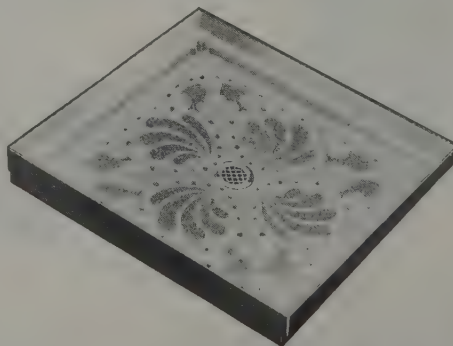
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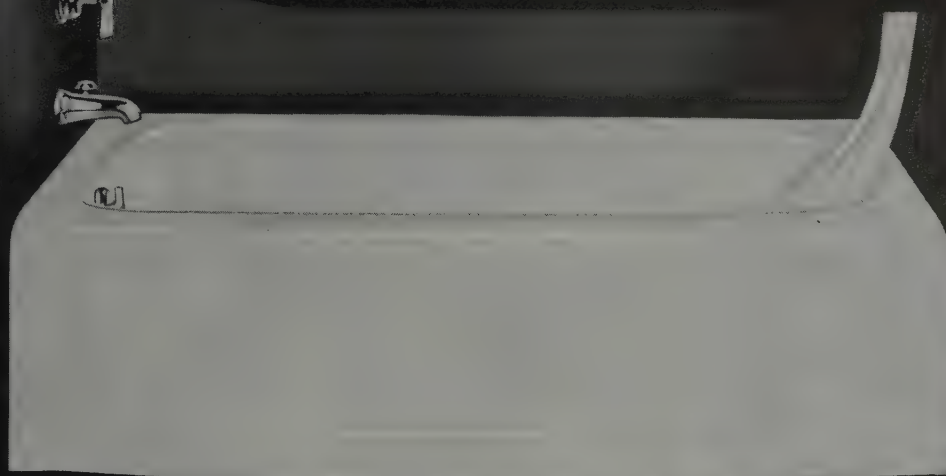


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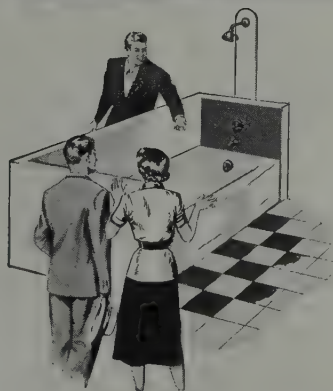


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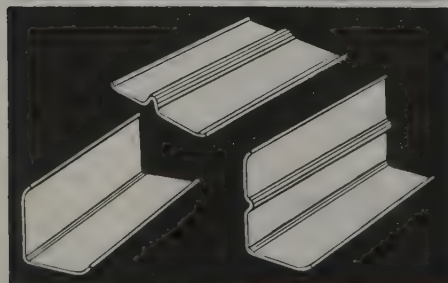
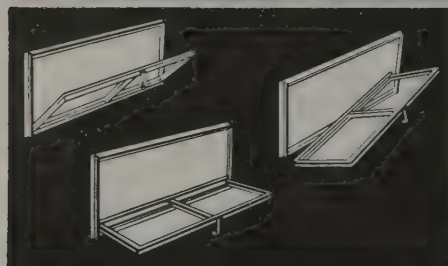
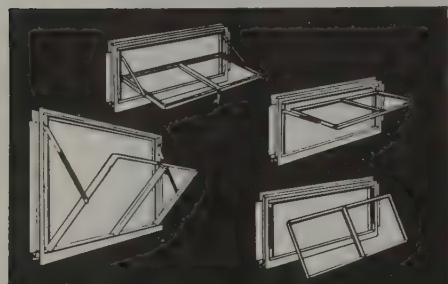
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## REVIEWS

color the selection of much of the non-Italian work contained in this volume as well.

For while it is perfectly true that the free-form, back-to-nature school of design has been exceedingly active in the postwar years, its output, with some exceptions, has been largely indifferent or even downright bad, in the worst sense of imitative arts-and-craftsiness. Most of the interiors shown in this book seem populated with chairs that look as if they not only had a personality, but a frighteningly active *life* of their own; in fact, some of these rooms, though they are pictured devoid of human beings, are so crowded with apparently animate chairs, tables, settees and fireplace hoods that the casual intruder must surely suspect that he is crashing a cocktail party attended by sinewy gymnasts stripped down for instantaneous sprinting. This kind of interior may be an amusing addition to the latest Surrealist exhibition in Paris, and one feels certain that the chairs enjoy the presence of the tables, the lamps enjoy the presence of the settees, and the Miro on the wall or the Calder dangling from the ceiling feels a warm kinship with the kidney-shaped rug or the twisted glass bowl on the table.

But, somehow, one wonders whether the individual human being—the consumer of all these Freudian trappings—is really going to find himself or herself comfortably at home in this nervous décor. For, after all, this individual is the *raison d'être* of these elaborate productions; and the chances are that he will find himself rather outnumbered.

There is another point of view—a point of view not represented here and not represented very widely in the design movement for which this book is an eloquent spokesman: that is the point of view which says that the interior of architecture should be merely a neutral, dignified and restrained backdrop against which human life (which tends to be a trifle more interesting than life-among-the-free-forms) can develop unhampered by visual interference. This is the point of view that produced some of the "machine-art" interiors of the prewar era, and it is a point of view that is being revived, in the US at least, by designers and architects who have had their fun and are going back to a more balanced diet. Meanwhile, this book is a fascinating (and occasionally hilarious) commentary upon a period that may some day be known as the "Phallic Forties."

**DICTIONARY OF ARCHITECTURE.** By Henry H. Saylor. John Wiley & Sons, New York. 221 pp. illus. \$4.50

For students of architecture and building, this is a handy reference work. Here, as the author says in his preface: one can find the spelling, pronunciation (if unusual) and concise definition of the terms met in the study, historical reading and practice of architecture. Within this frame, the material is handled expertly and tidily. Twelve plates are devoted to objects best explained visually.



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College Campus is shown in a new and  
enlarged presentation

**Mexico City**, whose new buildings exhibit  
a refreshing repertory of design, and  
some fantastic architectural adventures

**New quarters for Grand Union**, a grocery chain  
which has doubled its sales  
with a new concept of store arrangement

**Latest Hospitals** of Isadore Rosenfield,  
who has found new ways to give hospitals  
better nursing facilities, cheaper rooms  
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THE MAGAZINE OF BUILDING

architectural **forum**

540 North Michigan Avenue, Chicago 11, Ill.

New  
bathroom

STYLE



## THE WHITNEY BUILT-IN with angled control panel

Case now makes it easy to give bathrooms interesting,  
individual styling with the new Case *Whitney* counter-type vitreous  
china lavatory, and the CASE® *One-Piece*\* Water Closet, with  
either elongated or regular bowl. The 22"x18" square basin lavatory  
is roomy, yet ideal where space is limited. Its slanting control  
panel, soap depression, and concealed front overflow are  
design features typical of Case quality fixtures. See it at your Case  
Distributors—listed in Classified Telephone Directories in  
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## The Non-Overflow Case One-Piece with elongated bowl

Widely preferred for its  
efficient performance and  
quiet operation, the Case  
*One-Piece* Water Closet is  
now available with either  
regular and elongated bowl.  
Special fittings and con-  
struction makes this closet  
especially free from trouble.  
Positive protection against  
bowl overflow due to  
accident or carelessness is  
an exclusive Case feature.

Case

*Fine Vitreous China*

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# Protect Your Paint Jobs with ARKANSAS SOFT PINE SIDING ... It Won't Bleed Through



Priming penetrates the resin-free fiber and becomes integral with it.



Finishing coats are brushed on and worked into the wood, minimizing checking.



Soft texture nails without splitting. Cornice mouldings stay put, with no marring open joints.

Arkansas Soft Pine siding can take it... in Texas summers, Maine winters or Corn Belt hot spells!

Arkansas Soft Pine is free from pitch. There's nothing in the wood to bleed through.

## It's A NATURAL

Priming penetrates the resin-free soft texture of Arkansas Soft Pine, becoming integral with the wood's fiber. Finishing coats thus are brushed on and worked into the wood itself, not merely carried on the surface of the primer. This advantage minimizes paint checking or scaling.

Freedom from pitch spells soft texture that nails without splitting, even miters at all joints, no unsightly cracks, cornice mouldings that stay put, which add up to maximum protection of paint.

Arkansas Soft Pine is available at lumber dealers east of the Rockies in standard patterns of drop and bevel siding and clapboards, along with dimension, sheathing and finish of the same superior soft textured stock.

For data on how to specify, illustrated grades, painting instructions, etc., ask for your copy of this complete Handbook for Builders.

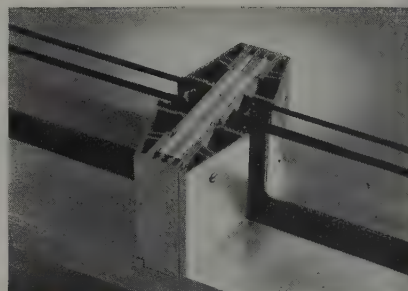
**ARKANSAS**  
*Soft Pine*  
**BUREAU**

952 Boyle Building

**LITTLE ROCK, ARKANSAS**

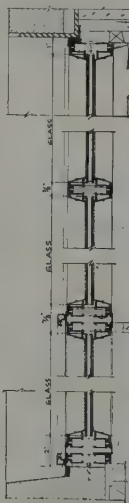


## PRODUCT NEWS



### BEVELED ALUMINUM FRAMING with insulating core made in stock window sizes

Since Bill Levitt's customers first fell for his living rooms which elbowed the great outdoors, other builders have perked sales (and labor time) with prefab "window walls." Several wood units—one made by Fabrow Mfg. Co. with load-bearing 2 x 6's (see *Product*



Shipped in ready-to-install units of one to nine lights, the smart metal framing will take single or double panes.

*News*, May '51)—and a few metal units for insulated double-glazing have cropped up in sizes to correspond to stock panels. One recent aluminum version, *Thermo Sash*, reaches a high level of sophistication in design and function for a factory-made construction material. Slim tapers give the satin-finished extrusions a bulklessness which belies their rigidity and strength, and the deep sloping sections create a generous reveal with rich sight and shadow lines.

An adaptation of a weather-tested commercial and industrial curtain wall framing, the new residential framing features plastic-coated plywood wedges between exterior and interior sections which act as insulation by preventing conduction of heat or cold through the metal members. (Even when it hits 20° below outdoors, no condensation or frost will form on inside surfaces.) Having a U factor of .38, *Thermo Sash* seems to be a natural counterpart for insulated double-glazing. It also may be used with single panes where the climate is mild.

Fortunately, *Thermo Sash* price tags do not mirror the custom smartness of the framing,

(Continued on page 182)





## ONLY **Auto-lok** GIVES YOU ALL THESE OUTSTANDING FEATURES



### EASIEST TO CLEAN...

Nothing to lift out... no sash to remove... no gadgets to disengage. Simply open wide and clean all glass from the inside... top sash, too!



### FRESH AIR NITE-VENT...

Bottom sash opens slightly for night ventilation, while upper sash remain securely locked... fresh air circulation during bad weather, too!



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Narrow horizontal lines and graceful tilt of sash in every open position add distinction to any home... lend themselves to a wider variety of architectural arrangements.



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for a lifetime. Perfectly balanced, friction-free mechanism operates window at the touch of a finger. No adjustments every necessary... never sticks, never rattles!



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Can be handled all from the inside. Just flip the clips... no tools required. Reduce a day's work to an hour!



### CONCEALED HARDWARE

No unsafe, unsightly mechanism exposed to collect dust. Compact reto-type operator handle does not interfere with drapes, blinds, etc.

*Tightest Closing Windows Ever Made*  
...SEALS SHUT LIKE YOUR REFRIGERATOR

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AUTOMATIC LOCKING  
PATENTED

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Dealer ☐

☐ Other \_\_\_\_\_

Name \_\_\_\_\_

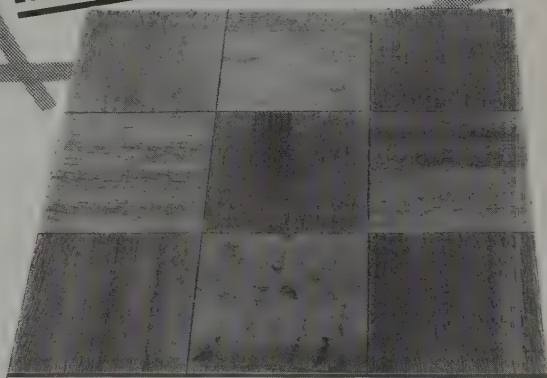
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LUDMAN LEADS THE WORLD IN WINDOW ENGINEERING



**At Last — A Practical  
Hardwood Flooring for  
RADIANT-HEATED HOMES**



## PARKAY Gothic Oak

Let's face it! Up to now, hardwood floors and radiant heat just haven't been able to live happily under the same roof. You know the problems. Unsightly cracks during the heating season, due to shrinkage. Bulges from expansion due to summer moisture.

Now Parkay comes up with the happy solution—Gothic Oak hardwood flooring. This wood has the quality of changing less dimensionally than our other flooring woods. Applied directly to the concrete with Parkay Adhesive, Gothic Oak will vary the least dimensionally during these alternate periods of dry heat and excessive moisture.

You get a beautiful floor in the bargain, too. Gothic Oak's rich, brown color extends throughout its full thickness. Factory finishing protects and accentuates its natural beauty. Gothic Oak ready-finished hardwood flooring is available in 8" x 8" units (illustrated above) and 12" x 12" units made up of four 6" sections. Both are 5/16-inch thick and have beveled edges.

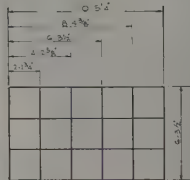
Write today for new free bulletin on Parkay Gothic Oak for radiant heat service. Parkay, Incorporated, 5002 Crittenden Drive, Louisville 9, Ky.



**PARKAY**

**READY-FINISHED HARDWOOD  
FOR FLOORS AND WALLS**

## PRODUCT NEWS



but bring it within the \$-conscious range of mass-building. Available for single lights as well as multiples, a nine-panel section 11' 3 1/2" wide x 6' 3 1/2" tall sells for \$182.70, unglazed, fob factory. Ventilating sash and screens are available at additional cost. *Thermo Sash* also can be ordered job-tailored to specifications. (See August 1952 issue). The framing is made in widths 2 3/4" to 5" and, to date, has met required deflections and wind loads for windows as high as 14'.

*Manufacturer:* Kesko Products, Bristol, Ind.

### CONSTRUCTION TOOL halves nailing time

It has been some time since a paleolithic Piltown lashed a stone to the end of a stick, but until recent years the building industry could boast in its hammer only minor modifications of the early weapon. The current swing to labor-saving mechanical implements finally is catching up with that good old standby. The *Fox Nailer* is one device sure to interest anyone who has suffered the ignominy of bruising a thumb while starting a nail, the frustration of bending a half-driven 10 penny, or an aching deltoid after overhead nailing. A simple efficient attachment for a pistol-type pneumatic hammer, the 6" long *Fox #16* consists of just four parts—two of which move but need no lubrication. Any common 6 to 16 penny nail may be inserted, head first, in the muzzle; when the trigger is squeezed, rapid blows of an alloy steel plunger drive in the nail. The tool not only starts the nail, but will drive it in at any angle. The manufacturer says that a carpenter can keep up a pace of 20 nails per min. with the *Fox Nailer* and feel less fatigued than if he uses an ordinary hammer to drive 10 per min. Already tested for 2 1/2 yrs. on big and little construction projects in the Pacific Northwest, one *Fox Nailer* has 1 1/2 million spikes to its credit without a single fizzle. It sells for \$39.

*Manufacturer:* Fox Nailer Corp., 3706 Airport Way, Seattle 4, Wash.

(Continued on page 186)







Nation-wide survey answers a question important to YOU

**Question:** Which vinyl-asbestos flooring Wins the greatest User Preference?

**Answer:**



**ARISTOFLEX**  
THE ARISTOCRAT OF RESILIENT FLOORING

*Here's why*

**Can be installed on, above, or below grade**

This is possible because Aristoflex is vinyl-asbestos from top to bottom with no felt backing. It is tough, durable, flexible. So, you can specify Aristoflex as a multi-purpose flooring, ideal for practically all installations.

**LOW COST**

Standard-gauge Aristoflex is comparable in price to greaseproof asphalt tile, yet it is far superior. Thus, you can give your clients the many advantages of modern vinyl-asbestos flooring at a price that meets the requirements of even low-budget projects. Aristoflex is also available in the 1/8" heavy-duty thickness.

**Rich, new CORONATION COLORS**

The bright, sharp colors of Aristoflex are outstanding. Colors and marblization go clear through each tile. Aristoflex maintains its sparkling beauty for years and years. You must see samples to appreciate the superior colors of Aristoflex.

**Keeps installation costs at a minimum**

Aristoflex requires no special cements, ordinary asphalt tile adhesives do the job. And standard-gauge Aristoflex cuts clean with a torch. It lays in tightly, immediately, because of square corners, clean edges and flexibility. Installation is fast and easy, cutting labor costs.

**Greaseproof**

Greases, bleaches and turpentine cannot deteriorate Aristoflex. It is really greaseproof. And Aristoflex cleans easily — never needs waxing. It's smooth, non-porous surface sheds dirt, wipes clean with a damp mop.

**Resists acids, alkalis, petroleum, fire**

A high percentage of those questioned reported this resistance a prime factor in the wide acceptance of Aristoflex among builders and home owners alike. More and more users are demanding this and the other inherent characteristics of vinyl-asbestos in the floors they buy.

**Unchanging Quality**

Aristoflex is made from carefully selected and tested raw materials. It is manufactured under a rigorous method of control that assures a uniform high standard of quality. You can always specify Aristoflex with full confidence that it will meet your most exacting requirements.

**Resilient -- Good Sound Absorption**

Because Aristoflex is resilient underfoot it is comfortable and quiet to walk on. These properties make Aristoflex especially desirable for institutions and office buildings.

QUALITY CONTROLLED

**MA-TI-CO**  
TILE FLOORING



**MASTIC TILE**

**CORPORATION OF AMERICA**

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# Pella

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### SCREENS THAT ROLL UP AND DOWN

will earn credits for you year after year

**ROLSCREENS**, the original inconspicuous inside screens that roll up and down like window shades are standard equipment on Pella wood casement windows. Rolscreens have easy finger-tip operation. Never need to be stored, painted, put up or taken down.

**NEAT, NARROW MULLIONS**—When several Pella units are used in an opening, they join to form neat, narrow mullions. Special mullions in any angle available for bays.

**DUAL GLAZING AND WEATHERSTRIPPING**—Pella casements are DUAL GLAZED to insulate against winter cold and summer heat. Sash is equipped on all four sides with exclusive compression-type stainless steel weatherstripping to eliminate drafts. Air and dust infiltration is practically nil.

**GLASS SIZES UP TO 24" x 60"**—Pella offers stock-size units with glass sizes up to 24" wide by 60" high. Stock-size Pella wood casements are available to accommodate a wide variety of standard Thermopane and Twindow insulating glass.

**ONLY A FEW MINUTES TO INSTALL**—Pella wood casements are factory assembled and fitted into a 16-gauge steel frame which surrounds each window unit. Come individually packaged, ready to place in rough wall openings. Weathertight installation can be completed in about 30 minutes' time. Mail coupon below for file set of Pella window details. Also see Pella Catalog in Sweet's Architectural File or Sweet's Builders' File.



**Pella**  
WOOD  
CASEMENT  
WINDOWS

MAIL COUPON TODAY

**ROLSCREEN COMPANY,**  
Dept. D36, Pella, Iowa

Please send me, without obligation, your file set of Pella window details.

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MADE BY MAKERS OF FAMOUS PELLA ROLSREENS AND PELLA VENETIAN BLINDS.

## PRODUCT NEWS

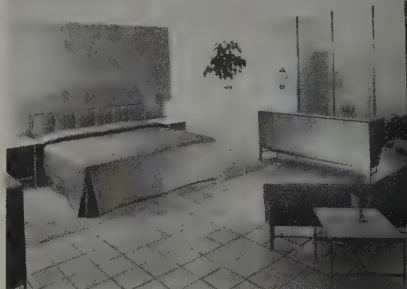
### WARM BRASS AND COOL MARBLE give temperature change-of-pace to new mahogany furniture

Paul McCobb is a designer who thinks first and foremost in terms of rooms. He designs furniture for rooms and rooms for furniture (see photos). His current preoccupation is with the light, white look and his newest furniture literally reflects this interest. Looking for a material more in line with the light-struck look than iron, he came up with sunny brass, using it in the bases and as supports for pieces very simply executed with "sand drift" mahogany finish. As a further contrast he has supplied tables and two chests with



\$290 dining table (40" x 72") has three 1' fillers; chairs have foam-rubber seats and backs. Screen folding doors open the compartmented buffet, selling for \$247.

Double dresser, 72" long, is fitted with trays for clothing. It retails for about \$357.



marble tops, highly polished to reflect light. This furniture introduces no startlingly new design concepts but with its nice use of wood grain and its carefully selected fabrics, it is livable to an unusual degree. The scale is tidy, too, so that it would work well in far smaller rooms than McCobb has devised as settings for it. Only the bed, with its 6'6" wide brass-framed headboard and the 72" storage chest demand real space in the grand manner. Particularly useful are the small tables (22" square) with glass tops and brass legs and stringers since they could fit into any room in the house.

Manufacturer: Robert W. Irwin Co., Grand Rapids, Mich.

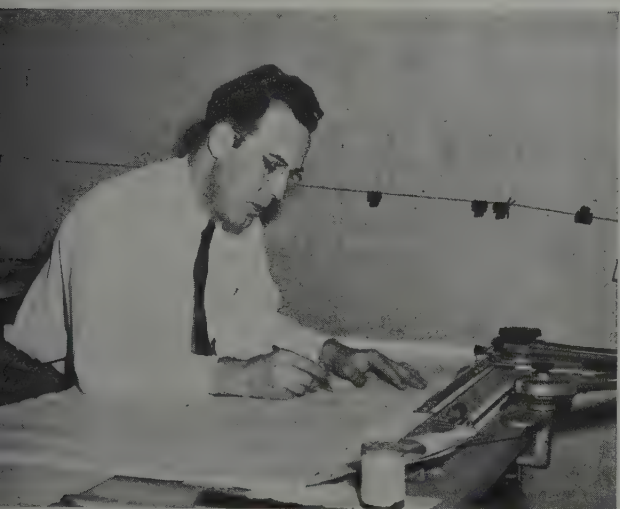
(Continued on page 192)



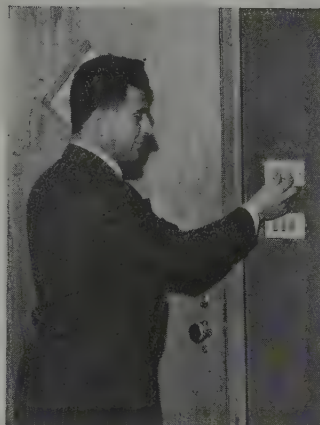
# get the convenience and for about 17¢ a month"



I am sure that G-E remote control will be a help to us in the Ridgeood Project now that home buyers are demanding more for their money. I recommend it to any builder who wants to add a modern idea to building at a low cost."



NEW SCHOOL in Asheboro, N. C., features G-E remote-control wiring for classroom lighting. Architect J. J. Croft, Jr., reports, "G-E remote control is what I've been waiting for, for this type of building."



"MASTER SELECTOR SWITCH is the feature that starts conversation," reports Arthur Nalbandian, president of American Builders, Inc., Hackensack, N. J. "Twenty thousand people have come out to see it in our homes at Closter, N. J."



75 HOUSES in the \$26,000 to \$40,000 price range feature G-E remote control at Lake Park Estates, Dallas. "It's an important selling tool that costs about \$50 extra per home," says James D. Crow, builder. "Prospective buyers like the idea. Owners like the convenience it offers."

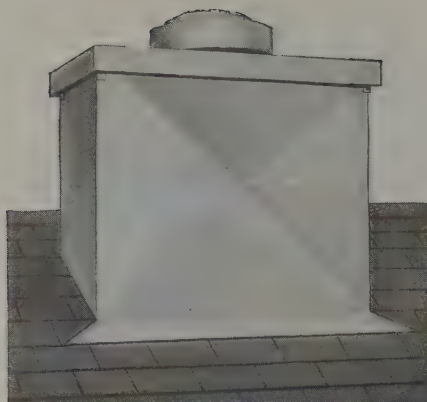
## GET THESE IMPORTANT SELLING AIDS

- 1. CONTRACTOR'S MANUAL**—Thirty-six-page manual gives you all the facts—layout, wiring diagrams, and important installation hints. Let this booklet bring you up to date on G-E remote control.
- 2. CONSUMER BOOKLET**—To explain the advantages of G-E remote-control wiring to your prospects, General Electric offers an informative, 8-page booklet. Write for a copy of the Remote-Control Consumer booklet, and ask for information on obtaining it in quantity.
- 3. LOCAL ADVERTISING MATERIAL**—A complete package of advertising material has been prepared for use with your remote-control program. Ask for this important selling aid.

For any of these aids, see your G-E Construction Materials distributor, or write Section D18-96, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

*You can put your confidence in—*

**GENERAL  ELECTRIC**

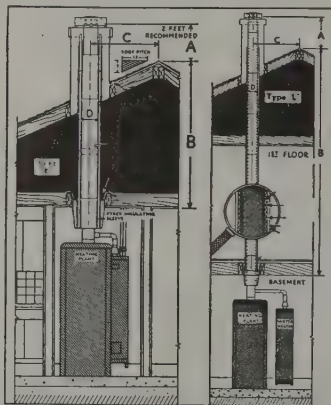


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in the Pioneer  
**VITROLINER**  
prefabricated CHIMNEY

The NEW Deluxe Housing for the regular Vitroliner Chimney is designed to harmonize with the architectural lines of the more elaborate and larger ranch houses and buildings.

Nationally known and recognized as the best complete prefabricated chimney by many leading architects, project home builders and single contractors.

For ALL fuels in one or two story construction. Quality-built for long life time-tested for over ten years and proved successful. Accepted by F.H.A. and listed by Underwriters Laboratories.



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- SAVES VALUABLE FLOOR SPACE
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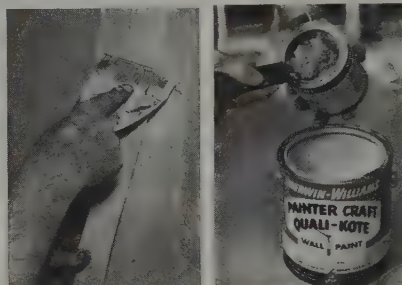
Investigate this fast-selling modern low-cost chimney today. Write for illustrated circular or phone ARmitage 6-5070 for quotations.

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## PRODUCT NEWS

### DRY WALL FINISHING SYSTEM. Choice of smooth, stippled, or sand textured surface

Convenient and inexpensive, dry wall construction is popular with many builders. It is not so popular, however, with all home buyers. Many potential clients who have seen the self-conscious seams and unconcealed nailheads of a poorly finished job, have left the site no sale. Recently several firms, led by the wallboard manufacturers themselves, have developed perforated tape, metal corner beads, special coatings and application techniques to improve the appearance and durability of dry wall construction without taking it out of the lowest price wall-material category. Now big paint company Sherwin Williams, illustrating its cognizance of current building problems, announces four products in its bid for a better dry wall. Three of the new materials contain silicones (which seem



to be proving themselves an aureomycin for many construction ailments): a joint filler, formula 103; a stipple texture, formula 102 and an electrically baked silica bead mix, formula 100. Rounding out the group is a new durable and scrubbable paint—*Quali-Kote*. Unlike most messy joint cements which must be mixed on the job (and the unused goo wasted), the *Silicon Filler* is ready to use from its 1 or 5 gal. container. A thinned-down version of the filler, the *Stipple Texture* may be trowled smooth over the board for a plasterlike surface or can be textured with a roller or sponge. If a sand finish is wanted, the *Silicon Mix* is added to both prime and top paint coats and the mixture either brushed, rolled or sprayed on. Both the *Silicon Filler* and the *Stipple Texture* sell to contractors for about \$2 per gal. The *Mix* is \$2.20 and the paint about \$4.15. The latter will cover about 500 sq. ft. per gal. Although the three silicon compounds are formulated primarily to be used with the new latex-base paint, they are compatible with oil and resin-type coatings. *Manufacturer: Sherwin Williams Co., Cleveland 1, Ohio*

(Continued on page 198)

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# household coverage of **LIFE**

## Here are some of the facts of LIFE's household coverage

**More than 5,200,000 copies of LIFE are bought each week.**

Every week, LIFE reaches 11,880,000 U. S. households (meaning all people who regularly live together in one home or dwelling unit).

Every week, in 10,270,000 of these households, LIFE is read by half or more of all adults.

Every week, in 4,500,000 of these households, LIFE is read by all adults.

In the course of 13 issues, LIFE reaches 25,640,000 different households. *That is 60.4% of all U. S. households.*

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In the course of 13 issues, LIFE reaches 65% of all U. S. households in the middle and upper socio-economic groups—and 58% of all U. S. households living in owned homes.

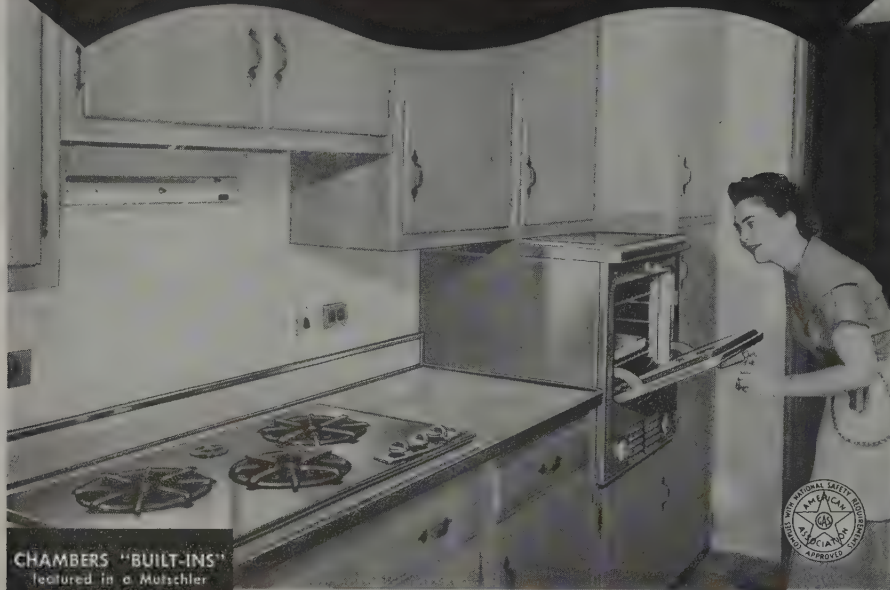
These facts are from *A Study of the Household Accumulative Audience of LIFE*, by Alfred Politz Research, Inc. A LIFE "Household" is one in which one or more of the adult members have seen one or more of 13 issues of LIFE.



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Cabinets Manufactured For  
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Kitchen Maid, Andrews, Ind.  
Lyon, Aurora, Ill.  
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☐ Please send me A.I.A. Specification Sheet for Chambers Built-Ins.

☐ I am interested in Dealer Franchise Information, and the name of my local Distributor.

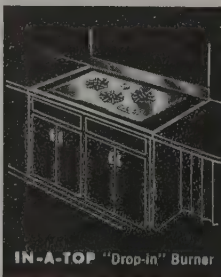
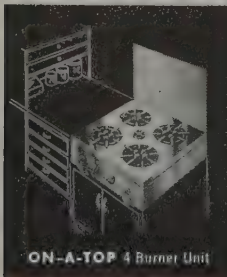
I am an Architect ☐ Builder-Contractor ☐ Dealer ☐

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## PRODUCT NEWS



**DUAL TOOL** is quickly converted from high pressure pump to chain saw

For cartoonist Steinberg devotees who relish umbrella stands née bassinets, and for practical minded maintenance men and contractors, Kiekhaefer Corp. has a double-barreled delight. The manufacturer's new two-way tool consists of a portable high pressure pump that can be switched in less than a minute to chain saw operation. No special tools are necessary to attach the 18 lb. unit to a mercury-powered chain saw engine. The combination, weighing 63 lbs., can be handled by one man. Selling for approximately \$145, the pump has a 50 gal. per min. capacity at 125 psi. The chain saw (model DA-w11) with mercury engine costs about \$495.

Manufacturer: Kiekhaefer Corp., Dept. P-2-9, Fond Du Lac, Wis.

**TERMITE KILLING CHEMICAL** spread on soil during building

In regions where gluttonous termites eat "on the house," buyer interest should be whetted by new homes protected against the pests. A chlordane soil treatment solution, used by professional exterminators, is now available to contractors for termite-proofing during construction. Sold in concentrated form, *U-Do-It* is mixed 1 part to 99 parts ordinary



tap water to make an effective exterminating compound. The killer, applied directly to the soil, is said to prevent infestation by subterranean termites for many years. *U-Do-It* costs \$44.95 per gal. undiluted (or about \$5 per gal. when mixed with the correct proportion of water). Unlike many insecticides the chlordane compound is reported to be beneficial to grass, trees and assorted flora.

Manufacturer: Federal Chemical Co., Inc., Indianapolis, Ind.

(Continued on page 200)



When your *Plans* are in the making



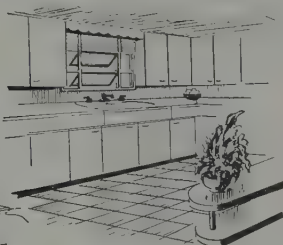
it pays to be Awning Window Wise!

...include **Gate City**

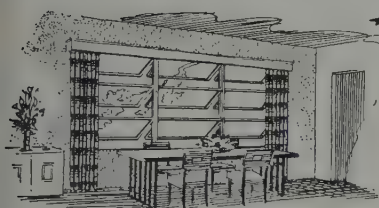
Preservative-Treated WOOD  
AWNING WINDOWS

here ...

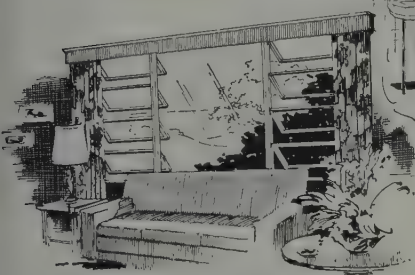
there ...



and  
everywhere!



FOR A COOLER KITCHEN,  
VENTILATED WINDOW WALLS  
AND PICTURE WINDOWS



A handle below the sill adjusts the sash to any angle for full ventilation, draft control and protection from every climatic extreme.

Performance Proven In All Types Of Buildings Since 1940  
GATE CITY gives you proof that good wood properly processed, never fails. All window parts preservative-treated for resistance to rot, rust, decay, termites, corrosion and warping.

**GATE CITY SASH & DOOR CO.**

"Wood Window Craftsmen Since 1910"

P.O. Box 901, Fort Lauderdale, Florida

Send For Free Literature

GATE CITY SASH & DOOR CO.  
P.O. Box 901, Fort Lauderdale, Florida

H&H-9

I plan to build ☐ remodel ☐  
Please send free literature on your Awning Windows.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

Consult your architect, building supply dealer, or write direct.

**A GRAND IDEA** — Home Buyers say

when  
there's a

**Majestic**  
INDOOR  
INCINERATOR

installed in Utility Room or Basement

And there's plenty of reason for this enthusiasm. Mrs. Housewife fully appreciates its step-saving features...the economical way it solves refuse disposal problems...the magic way it burns all wet and dry garbage and household trash, using no additional fuel! She likes the sanitary cleanness of disposal by flame!...its safe, positive, downdraft action...and especially, its guaranteed operation!



WRITE FOR DETAILS!

A Majestic Indoor Incinerator is a modern convenience for every home — but a must for basementless homes and those with automatic heating, where rubbish can't be burned in the furnace. It adds to value of property far beyond its low cost. Gas-fired model also available. Write today for free folder!

Burns wet and dry garbage and trash • No fuel required • Easy to install • Taps into furnace flue • No interference with furnace operation • Patented downdraft gives efficiency • 2 and 3 bushel capacities • Operation guaranteed

**The Majestic Co., Inc.**

413-A ERIE ST.

HUNTINGTON, INDIANA

Nationally advertised building products over 45 years

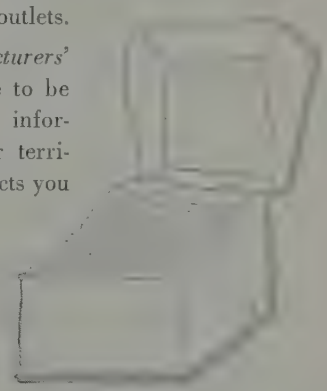
**manufacturers' agents**

**house + home** is compiling a new list of Manufacturers' Agents who are interested in adding new lines (homebuilding products, materials, equipment, specialties, etc.).

When completed, this list will be available to manufacturers seeking new outlets.

If you are a *Manufacturers' Agent* and would like to be listed, please send full information, including your territory and types of products you want to handle, to:

**George P. Shutt**  
Director of Advertising  
**house + home**  
9 Rockefeller Plaza  
New York 20, N. Y.



the eyes buy...

sell the preferred Visible Feature!

## WASTE KING PULVERATOR

AMERICA'S FINEST GARBAGE DISPOSER

Modern women buyers expect to find their new homes equipped with automatic garbage disposers. They LOOK for them! Be prepared to show them. WASTE KING Pulverator is the most modern VISIBLE FEATURE you can put into your homes—the lowest budget, highest quality feature that upgrades the value of the home bringing quicker sales.

### SUPERIOR WASTE KING FEATURES!

**"HUSH-CUSHIONS"**—give 50% quieter, smoother operation. Absorb noise and vibration. WASTE KING is the only really quiet garbage disposer.

**LIFETIME GRIND CONTROL**—controls the size of waste particles and length of fibrous materials for more years of dependable operation. Prevents jamming, clogging!

**UNBEATABLE SERVICE RECORD**—less than 1% service callbacks. Relieves builder of complaints. Customer satisfaction assured!

SELL UP THE PREFERRED VISIBLE FEATURE—



Buy from your Plumbing Contractor now!



A Product by GIVEN Mfg. Co., Los Angeles 58, Calif., Largest Independent Producer of Garbage Disposers in America!

## TECHNICAL PUBLICATIONS

**PLUMBING.** Capacity for Plumbing Stacks in Buildings. By Robert S. Wyly and Herbert M. Eaton. National Bureau of Standards BMS130. For Sale by Superintendent of Documents, U.S. Government Printing Office, Washington 25. D. C. 11 pp. 8½" x 10½". 20¢

This useful reference gives an account of the test to find out the maximum load that can be brought into a vertical plumbing stack from a horizontal branch when water is being discharged down the stack from fixtures on upper floors. The report outlines the problem of stack capacity, summarizes previous research, and suggests applications of the results of this investigation.

**PLUMBING FIXTURES.** Help For The Harried Homemaker. Briggs Manufacturing Co., Plumbing Ware Div., 3001 Miller Ave., Detroit 10, Mich. 6 pp. 3" x 6"

Showing exact color swatches of the four pastels available on Briggs Beautyware plumbing fixtures, the folder is a handy decorating aid in bathroom planning. The deposits of matching enameled colors bleed off the edge of the folder so that other room accessories can be placed next to the colors for comparison.

**HARDWARE.** Curtain and Drapery Traverse Hardware. Grant Pulley & Hardware Co., 31-80 Whitestone Parkway, Flushing, N. Y. 6 pp. 8½" x 11"

Written to make every aspect of the manufacturer's traverse hardware—from installation to specifying—understandable, the new folder covers such information as mounting instructions, window treatment suggestions, parts and accessories, and dimension data. (Cover illustrated on page 204)

**LIGHTING.** Lighting Fixtures. The Sheldon Lighting Co., Roosevelt, N. Y. 4 pp. 8½" x 11"

The folder describes a line of metal lighting fixtures for homes and commercial buildings. Outline dimensions, specifications, and list price are noted beneath drawings of each style wall and ceiling fixture. All carry Underwriter's approval.

**WATER CONDITIONING.** Permutit Data Book. The Permutit Co., 330 W. 42nd St., New York 36, N. Y. 116 pp. 5" x 7¼".

Superseding the 1949 edition, this revised data book contains much valuable technical information on water conditioning. Some of the subjects covered in tables and test are hydraulics, water impurities, chemical conversions, chemicals used in water treatment, alkalinity relationships, and chemical reactions. Bound in simulated leather, the pocket size volume should be a handy guide to those who work with water-conditioning problems.

(Continued on page 202)



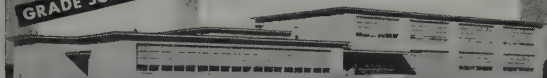
Builders, Designers — Get

# 3 Plus Benefits

for all types of light construction!

Parkview School, New Bedford, Ind. Use of Zonolite Acoustical Plastic in all classrooms, corridors and auditorium give maximum fire protection, 0.65 noise reduction—at low cost!

GRADE SCHOOL



- 1 **INSULATION VALUE**
- 2 **FIRE SAFETY**
- 3 **SOUND ABSORPTION**

## ZONOLITE® AGGREGATES



CHURCHES

Lincoln Park Community Church, Lincoln Park, Pa. Architect: George Savage. Zonolite plaster used.



OFFICE • STORE

Charles J. Schuh Building, St. Petersburg, Fla., Architect: Wm. B. Harvard. Zonolite plaster, insulating concrete roof fill, acoustical plastic used throughout.

**ZONOLITE PLASTER AGGREGATE**  
—Used by more plasterers than any other aggregate! Uniform, easy to use, saves valuable construction time. Affords highest fire ratings, provides added insulation.

**ZONOLITE CONCRETE AGGREGATE**  
—Gives concrete up to 16 times the insulating value of ordinary concrete in roofs and floors. Minimizes danger of condensation—ideal for radiant heating. Cuts heat loss.

**ZONOLITE ACOUSTICAL PLASTIC**  
—Lowest cost acoustical treatment to apply—0.65 noise reduction. 100% fire proof. Attractive textured finishes may be decorated without affecting efficiency.

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135 S. LaSalle St., Chicago 3, Illinois

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Please rush me your new interesting booklet, G-24, that shows how to get plus benefits in light construction with Zonolite Aggregates.

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MAIL THIS  
COUPON  
TODAY



# Comfort...

ESSENTIAL TO EVERY  
HOME YOU BUILD

... and comfort is the keynote in the Waterbury "Comfortrol" system. Fully automatic, the "Comfortrol" face and by-pass system provides a continuous, even flow of warm air ... effectively modulated to eliminate any abrupt temperature changes. Your customers will find "Comfortrol" dependable and economical, too—truly the latest in modern warm air heating and winter air conditioning. Waterbury "Comfortrol" systems are available in both oil and gas-fired units, and all "Comfortrol" units are equipped with thoroughly dependable Minneapolis-Honeywell modulating controls and dampers.



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information  
about  
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contact your  
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dealer or  
write direct.

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FURNACES  
WINTER AIR CONDITIONERS

In addition to "Comfortrol", Waterbury manufactures a complete line of warm air heating equipment. Remember, there's a Waterbury for every size home and for every type of fuel.

## The Waterman-Waterbury Co.

OVER 45 YEARS OF WARM AIR HEATING

1150 Jackson Street N. E., Minneapolis 13, Minnesota

# Watch women respond to

# Auto-Lok

AUTOMATIC LOCKING  
PATENTED

## WINDOWS



Why? It is so plainly evident! Auto-Lok is the new, modern miracle window... the window that "makes its own weather". It's the window selected by leading architects for their prize-winning homes. No wonder it's the window that actually sells homes to women!

Gone are the days of struggling and straining to open or close windows... hanging halfway out of windows, or lifting them bodily out of their frames to clean the glass.

Auto-Lok Windows open or close with finger-tip ease of operation... so simple a child can manage them. And, Auto-Lok Windows are the quickest and easiest windows in the world to clean!



CLEAN THE OUTSIDE FROM THE INSIDE... TOP VENT TOO!

## The amazing truth is... it's the window women want most!

It's the first window that combines the best features of all window types... the first and only window that actually gives women everything they've always wanted in a window... with none of the disadvantages they've put up with in the past.

The precision balanced, friction-free operating mechanism of Auto-Lok Windows not only provides unequaled operational ease, it is responsible for Auto-Lok's amazingly tight closure... **TEN TIMES TIGHTER** than the generally accepted standard.



### FRESH AIR WHILE IT'S RAINING...

No more running to close windows... rain can't enter through Auto-Lok's scientifically designed slanting sash.

### WARMER IN WINTER...

Auto-Lok Windows are the **tightest closing windows ever made** by actual laboratory tests. Heat stays in... cold stays out... cutting fuel costs!



### COOLER IN SUMMER...

Auto-Lok Windows open widest... almost 90°. The slanting sash help to scoop in even the slightest breeze... always inward and upward thus eliminating drafts.



## IT'S THE WINDOW THAT MAKES ITS OWN WEATHER!



**T**

oday is the opportune time to enter upon a home-building career, because you can become a successful builder from the word "GO" by buying, erecting and selling PEASE-FABRICATED HOMES. The hard, tedious conventional construction methods with their attendant uncertainties, waste, and mistakes are now things of the past and not to be feared by the new builder. Instead you can enjoy the positive certainty, ease, speed, and trouble-free home building that is the result of modern precision-fabrication. You can build PEASE-FABRICATED HOMES, unsurpassed in quality, permanency, livability, and salability. And you can build these much-in-demand homes without paying any architectural fees or even having to figure a bill of "material." You merely make your choice of the plan you want, the sidewall material, roof color, and the alternates, if any. We do the rest . . . and at no extra cost to you. It's just that simple.

# WANTED : NEW BUILDERS



This is plan No. 18, one of the many home designs offered in the ever increasing PEASE-FABRICATED HOMES line.

PEASE-FABRICATED HOMES come to your building site complete in easy to erect precision-fabricated sections. They're delivered as a complete package where and when you want them. You may choose 2, 3, and 4 bedroom homes from ranch style to Cape Cod, with exterior variations practically unlimited. With PEASE-FABRICATED HOMES there is a home for every buyer—every market. VA and FHA accepted.

**NO FRANCHISE REQUIRED.** Write for complete information

**WRITE TO PEASE-FABRICATED HOMES**

**PEASE WOODWORK COMPANY**

ROOM 933

Cincinnati 23, Ohio

"In business in Cincinnati since 1893"



its  
**new!!**

now the  
**BEST**  
gives you a choice of  
**TWO\***



**STEEL WALL TILE**

The makers of Crown Steel Wall Tile, the tile so good it earned a bonded guarantee, now introduce an all-new, all-beautiful tile—Crown Plastic Tile. Here is a distinguished plastic wall tile—one of character high enough to qualify it as a proud running mate

to Crown Steel Tile. Its true, bright colors and subtly handsome marbleizing set new high standards for beauty in the field of plastic wall tile. All sizes and shapes necessary for making finished installations are immediately available.

Good as this news is, it's only part of a bigger story—that you can now offer clients a choice of plastic or steel wall tile and in either case be offering them the best. **Whichever tile you select, you offer the finest tile of its kind.**

Your homes sell best when they offer the most. Including Crown Tile—either steel or plastic—in your plans is a sure way to have your homes offer the most and sell best.

**PLASTIC WALL TILE**



Write Dept. H for the name of your nearest dealer.

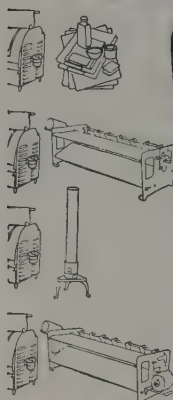


**Crown**  
**WALL TILE**

See our catalog in Sweet's Builder's and Architect's Files

**the ohio can & crown co.**  
**massillon, ohio**

**AMAZING!** the Time and Money Saved  
WITH **Spee-Dee WHITEPRINT OUTFITS**



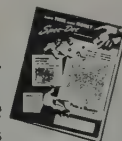
**Make Exact Duplicates in as little as One Minute at less than 2c sq. ft.**  
Inexpensive and simplest of all print making equipment! Thousands in daily use. Enables anyone to make accurate, positive whiteprints from translucent originals. Saves up to 80% of commercial blueprint costs—quickly pays for itself! Makes photocopies, too. Just plug in. Uses diazo (moist or ammonia dry) process. Complete portable *Spee-Dee* outfits in 12" x 18", 18" x 24" and 24" x 36" models. Prices start at \$55.00. Also a full line of 42" width capacity volume production whiteprinters at moderate prices.

**10 DAY  
FREE TRIAL**

Send today for Free  
*Spee-Dee* Brochure

**PECK & HARVEY**

Mfrs. of Whiteprint, Blueprint & Photocopy Equipment  
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## 18 PROFITABLE SALES FEATURES!

**MANY OF THEM  
EXCLUSIVE IN  
BESSLER**

### Disappearing Stairways

1. The ORIGINAL disappearing stairway—made for over 40 years.
2. A real stairway—not a ladder.
3. Seven well-engineered models—for every need.
4. Safety-designed in every detail for your protection.
5. Suitable for the finest homes—old and new.
6. Operates from above and below.
7. Full width treads—SAFE for everyone.
8. ALL steps are of equal height.
9. Treads and stringers are made of Sitka Spruce.
10. Full door width provides ample access for large objects.
11. Full length SAFE hand rail.
12. Accurate architectural design assures easy and SAFE ascending and descending.
13. All metal parts are made of strong, SAFE pressed steel.
14. Repairs always available on quick notice for all models—no "orphans."
15. Doors made of White Pine and Fir in two-panel type; flush doors in hardwood only.
16. Tailor-made for all heights—no short or long steps.
17. Proved in performance—hundreds of thousands in constant daily use.
18. IMMEDIATE DELIVERY!

**FREE!**  
**New Catalog!**

Illustrates and describes complete line of seven Bessler Disappearing Stairway Models to meet all your needs. This new catalog should be in your files for ready reference—write for your copy now!

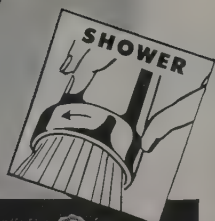


**BESSLER—best for over 40 years!**

The Bessler Disappearing Stairway Co., 1900 East Market St., Akron 5, Ohio



# The *SWING-DOWN* Fixture with the Modern Slant...



**ADJUSTO**



A Turn of the Hand for Tub Filler

## ONE FIXTURE does the work of TWO!

Why specify both shower and tub filler when ADJUSTO will do the job of both? Two fixtures cost more than one—they require more time and money both for installation and maintenance. And surprisingly enough, ADJUSTO is more convenient to use!

Investigate this modern fixture that is revolutionizing bathroom plumbing everywhere . . . then specify ADJUSTO.

QUALITY SINCE 1911

famous MILWAUKEE PLUMBING FIXTURES include: Sump Pumps, Deck Faucets, Sink Strainers, Tub Fillers, Trip Lever Wastes, Connected Wastes, Mixing Valves, Basin Fixtures, Showers and a variety of allied products.

SEE YOUR PLUMBING CONTRACTOR OR USE COUPON BELOW

**MILWAUKEE FLUSH VALVE COMPANY**

325 E. Reservoir Ave., Milwaukee 12, Wis.  
Please send descriptive Adjusto folder.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

SEND COUPON FOR

ILLUSTRATED FOLDER

Nervastral SEAL-PRUF was used for flashing throughout the \$20,000,000 Electchester Housing cooperative. Architect: Benjamin Braunstein. Builders: Paul Tishman Company, Inc.



# BETTER FLASHING

with non-critical  
**Nervastral SEAL-PRUF®**

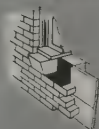
Save your copper allotment for use where nothing else will do the job efficiently. For non-exposed window flashing, spandrels, cut-offs, etc., use Nervastral SEAL-PRUF.

Nervastral SEAL-PRUF provides a degree of waterproofing comparable to copper, but does not require a mastic underneath because it is not affected by direct contact with Portland cement.

This completely different, homogeneous sheeting is tough, flexible, extremely elastic and pliable. It is lastingly waterproof and impermeable to moisture vapor. Nervastral SEAL-PRUF contains no organic fibres to break down and rot and will give many years of satisfactory service under the most extreme weather conditions. Laboratory tests confirm these facts.

Nervastral SEAL-PRUF is economical and easy to apply . . . cuts down labor costs. Type #30 is excellent for general construction in the residential housing field—28 mils thickness—rolls 72 feet long—in widths 36", 30", 24", 20", 18", 15", 12", 8". Special widths provided on request. Also available in Type #60 for heavier construction.

Nervastral is sold all over the country. Use coupon for name and address of nearest dealer and sample of material.



Nervastral SEAL-PRUF can be easily bent and shaped over irregular surfaces. Is unimpaired by subsequent settling of building.



Nervastral SEAL-PRUF is excellent for waterproofing beneath copings and along the foot of parapet walls.



Nervastral SEAL-PRUF is ideal for this use as it is completely unaffected by laitance of Portland cement, and by acid in cinder concrete.

**RUBBER & PLASTICS  
COMPOUND CO., INC.**

30 ROCKEFELLER PLAZA,  
NEW YORK 20, N. Y.

SEE OUR CATALOG IN SWEET'S



☐ Please send sample of Nervastral SEAL-PRUF and more information.

☐ Please send name of nearest distributor

Name \_\_\_\_\_

Company \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

# Another heating revolution...

# 5 NEW COLEMAN GAS

# with DIRECTIONAIR

for greater comfort



**Economizer** saves heat that is usually wasted up chimney.



**Blower** is mounted atop wall heater. It blends room air with heated furnace air discharged from grille here.

Coleman meets the cost challenge with 5 improved Gas Wall Heaters from 25,000 to 55,000 BTU input—with a long list of improvements made to order for quick installation, bigger warm air flow and complete floor-level comfort in small and medium-priced homes.

*Revolutionary Directionair Blower and Economizer are exclusive Coleman features to make your heating installation more efficient and more attractive to home buyers.*

Now you get bigger heat production from small units complete in the wall. Inner casing is only 13 $\frac{5}{8}$ " wide and 57 $\frac{5}{8}$ " high, with depth to fit standard 2" x 4". All models fit same stud space. Extend out only 4" from the wall and save living space. No basement, no air ducts needed, no excavating. Ideal for all small construction—small homes, apartments, upstairs or basement rooms; motels and tourist courts.

Bright beauties with quick customer appeal, with casings drawn from a single sheet. Rounded edges repel dust. Smooth luxurious finish cleans with a swish. Models for LP-Gas, too. All AGA approved. Send for more information TODAY. The Coleman Company, Inc., Wichita 1, Kansas.

**4 Single Wall Models**  
25,000 and 35,000 BTU input



Directionair Blower optional on all models. Economizer optional on 25,000 BTU models; standard on 35,000 BTU models. Rear register on 25,000 and a 35,000 BTU model.

The maker of *Blend-Air* presents revolutionary low-cost wall heaters that are complete units—new features—versatile, flexible—with 22 applications to sell homes faster.

SEE OUR CATALOG IN SWEET'S FILE FOR BUILDERS



Coleman sets it off!

# WALL HEATERS

# BLOWER (optional)

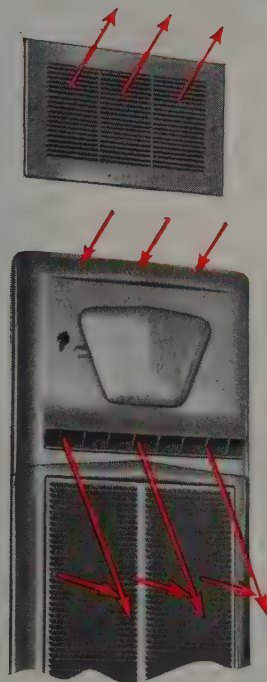
small homes

ual Wall Model

55,000 BTU input



2 adjoining rooms at same time. Directional air controlled from one delivers up to 75% of into either room. Directional Blower optional. Economizer standard.



Comfort costs so little with a

America's  
leader in  
home heating



ALL EQUIPMENT AGA APPROVED



**NEW HIGH HEATING EFFICIENCY**  
Greater Warm Air Circulation—Warmer Floors

LOOK AT THESE SPECIAL COLEMAN FEATURES:

**CERAMIC COATED COMBUSTION CHAMBER**  
with washboard corrugated walls.

**PRESSED STEEL BURNER** with stainless steel rick-rack.

**AUTOMATIC CONTROLS** with 100% Safety Pilot.

**LARGER GRILLE AT BOTTOM**  
increases warm air circulation.

## NEW ECONOMIZER

PUTS MORE HEAT INTO ROOM

It's a register that fits in wall above heater — prevents waste of heat up the chimney; helps cut fuel costs. When the Directional Blower is in use, ceiling air flows through Economizer, thus helping to increase circulation.

## NEW DIRECTIONAIR BLOWER

INCREASES WARM FLOOR COMFORT

Attach any time—no cutting, no installing problem. It pulls room air from the heated ceiling and blends it with furnace air — then puts the blended warm air down at floor level. Doubles warm air circulation. Keeps air moving—not standing still and static—keeps the low living zone fresh and comfortable. Operates at 3 speeds, adjustable. Automatic temperature controls, optional.

**REAR GRILLE:** Some models have additional rear grille that puts 20% of heat into another adjoining room. Takes off the chill—makes single wall heater give dual-wall convenience.

THE COLEMAN COMPANY, INC.  
Dept. MB-553, Wichita 1, Kansas  
Please send complete information on the new  
Coleman Gas Wall Heaters

Name \_\_\_\_\_

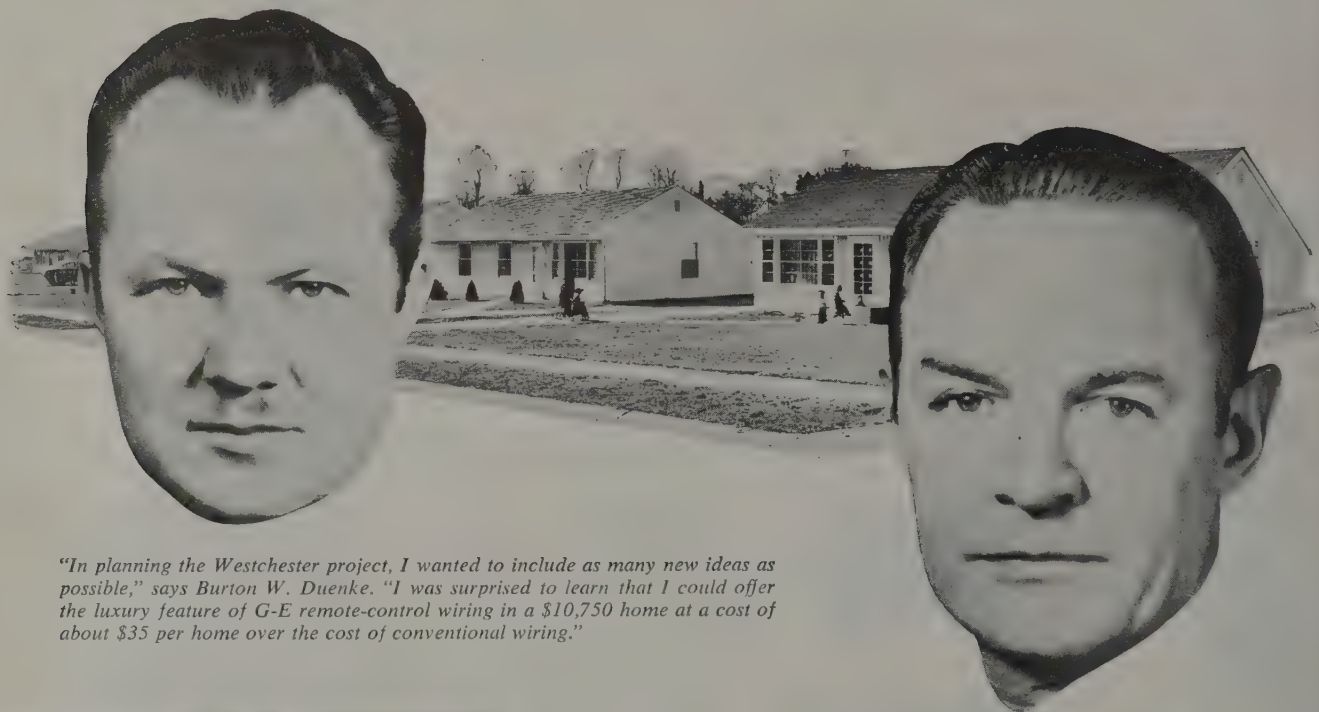
Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

No matter how big or small your home, there's a Coleman to heat it better



# "Buyers of my homes safety of G-E Remote Control



*"In planning the Westchester project, I wanted to include as many new ideas as possible," says Burton W. Duenke. "I was surprised to learn that I could offer the luxury feature of G-E remote-control wiring in a \$10,750 home at a cost of about \$35 per home over the cost of conventional wiring."*

*"I didn't think it could be done," reports Frank Hoog of Hoog Electric Company. "At first, remote-control wiring seemed more of a luxury than an economy. But after we wired the first few homes, I was convinced that G-E remote-control wiring is easy to install and doesn't cost much more than standard wiring."*

## BURTON W. DUENKE, MISSOURI BUILDER, REPORTS ON G-E REMOTE CONTROL

"Our Westchester project of 119 homes built in Kirkwood, Missouri, in 1951 had G-E remote control wiring throughout. Home owners in the project now have the convenience of remote-control wiring for about \$35.00 more per home. This means that they are paying about 17¢ a month for this modern wiring system," says builder Burton W. Duenke.

"We are now beginning the Ridgewood Project of 300 homes in Crestwood and Webster Groves, Missouri. These homes are larger and more modern in design and will sell for from \$12,000 to \$15,000. The functional character and increased safety of G-E remote-control wiring are in keeping with the modern design of these homes. The Ridgewood home owners will also get this step-saving convenience at a cost of about 17¢ a month.

"The remote control installations in both Westchester and Ridgewood include master selector switches for complete lighting control from the master bedroom and individual switches near the lights and outlets they control. Several home owners have been so pleased with the extra convenience of this wiring system that they have asked for additional switches in their homes," continues Mr. Duenke.



**"I COULDN'T DO WITHOUT IT** now that I've actually experienced the convenience of G-E remote-control wiring," says Mrs. Richard E. Savage, a home owner in the Westchester Homes project. "Switches are always right where I need them, and I must save hundreds of steps every day."



The Perfect Complement  
to a fine design...

**FOLLANSBEE**

Terne Metal



When designing homes with flat or very low pitch roofs, Follansbee Terne Metal roofing enables you to offer your clients watertight roofs. Follansbee Terne Metal roofing is permanent, windproof and fireproof because it's made with flat locked soldered seams. These seams make continuous metal roofs that keep out rain, melting snow and all other weather elements.

Follansbee Terne Metal, a copper-bearing steel strip coated with Terne Metal (lead-tin) alloy, permits unusual variability in color design. Terne may be painted to conform to any exterior color scheme, any time the building is refinished.

In Follansbee Terne Metal, the architect has a roofing material that is a complete answer to his primary problem of protection against the weather. Terne Metal Roofing offers him the utmost freedom in design and the widest latitude in the use of color.

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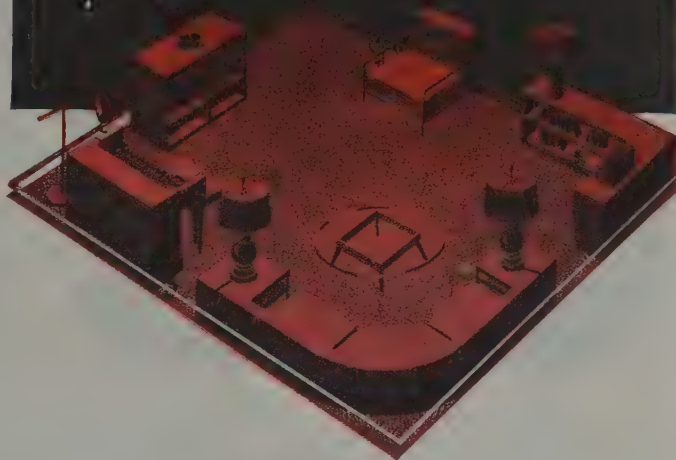
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\* ACT! \*

Robert Kliegman, Architect  
Photo by Robert C. Cleveland

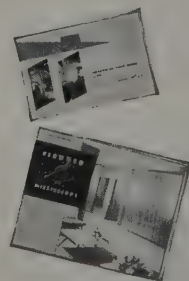
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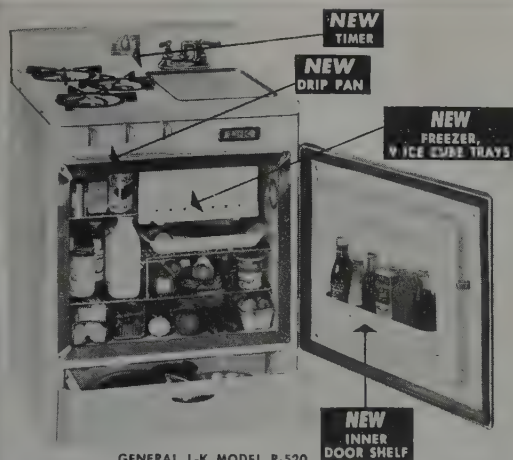
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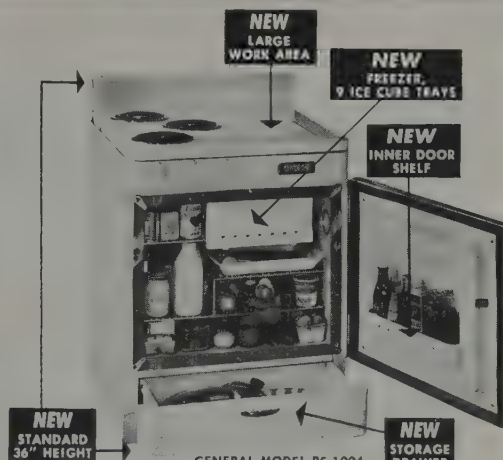
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**SNAP-ON SPREADERS.** Snap on to keep frame in alignment during erection... easily and quickly removed.

**NO SCREWS NEEDED.** Hammer is only tool needed. No screws in header-to-jamb assembly or in spreader-to-jamb.

**ECONOMICAL.** Assembly time only 11 minutes... easily transported, assembled and erected by one man... savings in storage and freight.

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**FRAME.** Material—18 U.S. gauge steel. Snap-on steel spreaders. Frames primed at factory. Frames equipped with two 3½" x 3½" 3-knuckle leaves hinge welded in place. Two knuckle leaves of hinges and hinge pins furnished for attaching door. Two rubber bumpers, plaster guard and screws furnished for strike side of jamb. Strike plate furnished, except for frames to be used with Schlage locks.

**ANCHORS.** Supplied with super rigid AMWELD stud anchors applied (welded) to jambs at points of stress. Corrugated "T" anchors available for use in masonry walls.

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AMWELD INTER-LOK FRAMES ON YOUR ORDERS  
Supplied for 4¼", 5¼", 6¼", Jamb Thickness for 2'0", 2'4", 2'6", 2'8" and 3'0" door widths.

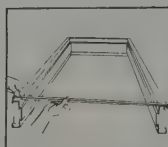
### 5 EASY STEPS



Insert jamb in header.



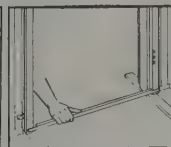
Bend AMWELD Inter-Lok tabs to lock in place.



Snap on spreaders at bottom of frame.



Install frame.



Remove spreaders.

PATENT APPLIED FOR



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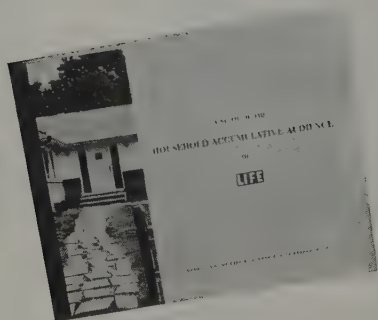
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# New study reveals amazing

## In the course of 13 issues, LIFE reaches 3 out of every 5 U. S. households



For a free copy of this new 166-page book,  
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 write A. Edward Miller, Research Director,  
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You may already know, from LIFE's earlier study, that during the course of 13 issues LIFE reaches more than half the nation: 62,600,000 different people aged 10 and over.

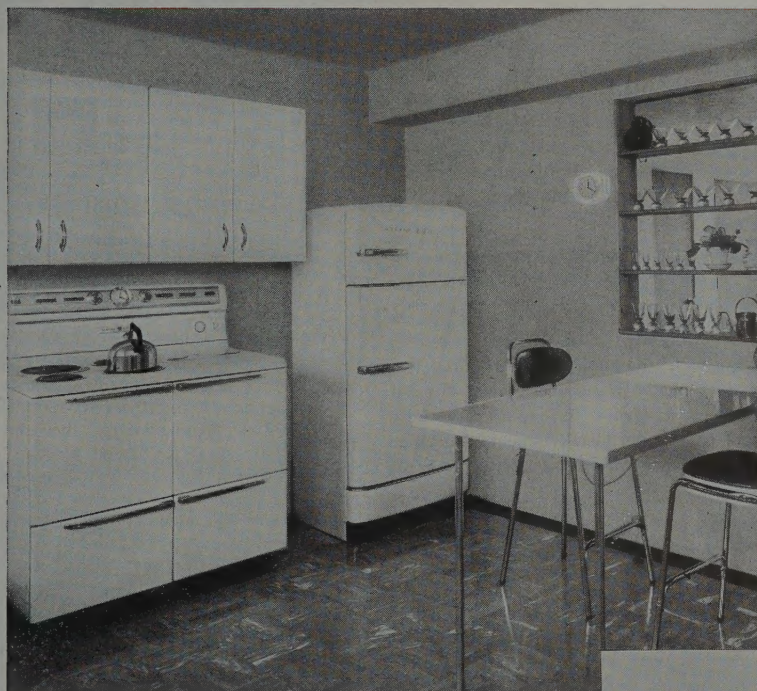
And now, advertisers who have found that they must reach these multimillions *in household buying units*—not just as individuals—can have the facts which prove that by households, too, LIFE reaches more than half the nation: 25,640,000 households.

In the course of 13 issues, LIFE reaches 60.4% of all U. S. households. That totals 25,640,000 opportunities to sell building products, TV sets, refrigerators, home goods, hard goods, products of all kinds that are bought not by "Mr." alone—not by "Mrs." alone—but where sister, brother, grandma, and everybody in the household group contributes to the buying decision.

LIFE advertisers reach this vast household market regularly. Therefore, when you build and equip your houses with products advertised in LIFE, you have a tremendous sales advantage. To make the most of it—remind your prospects that your houses contain the nationally advertised quality materials and appliances they read about in their favorite magazine—LIFE.



*I have modern ideas...*  
**so my range must be electric!**



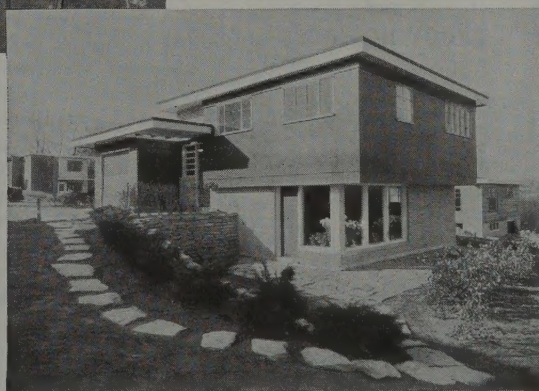
Modern homes appeal to me, especially when they are designed for efficiency. That's why I prefer an *Electric Range*—because it *belongs* in my new home, and because with it I can cook and bake with a saving of time and effort!

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• Builder Clay practiced electrical engineering for 16 years before entering the building field, so he knows why electrical convenience can make the homemaker's job easy and pleasant. He applies his knowledge in the kitchens of his houses, too—so the range—of course, it's **ELECTRIC!**



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**RANGES**



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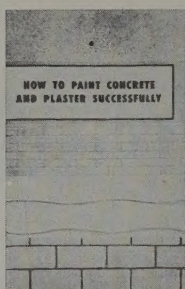
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Street.....

City.....Zone.....State.....

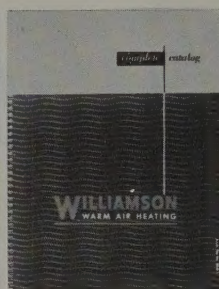
H&H

## TECHNICAL PUBLICATIONS



**PAINT.** How To Paint Concrete and Plaster Successfully. Truscon Laboratories, Dept. DB, Box 69, Milwaukee Junction P. O., Detroit 11, Michigan. 48 pp. 6" x 9". \$ .25

Prepared to explain the use of Truscon's rubber base coatings, the handbook contains photos and drawings, and describes quite simply the treatment of concrete, plaster, and other masonry surfaces on exteriors, interiors, and floors. It presents helpful data on general painting practices and estimating.



**HEATING.** Williamson Warm Air Heating. The Williamson Heater Co., 3500 Madison Road, Cincinnati 9, Ohio. 32 pp. 8 1/2" x 11".

Attractively presented in this new two-color catalogue is a complete line of gas-fired furnaces for homes—grand and modest, old and new. Modern layout techniques are fully utilized to explain the equipments' workings and, incidentally, keep the reader reading.

**HEATING.** National Art Convectors, Catalogue No. 601. The National Radiator Co., Johnstown, Pa. 24 pp. 8 1/2" x 11".

New convector ratings which conform to the Commercial Standard developed by the trade and the National Bureau of Standards are included in this booklet. Roughing-in dimensions and installation instructions for convectors and their enclosures are given as well as rating tables, piping connection drawings, selection data, and information on the construction and performance of the convectors' components. Free-standing and semi-recessed steel enclosures for the convectors are described and pictured.

**KITCHEN EQUIPMENT.** The New Chambers Built-In Gas Cooking Assemblies. The Chambers Corp., Shelbyville, Indiana. 4 pp. 8 1/2" x 11".

To acquaint designers and builders with its decentralized built-in cooking units, Chambers has issued this informative file folder. The brochure illustrates the handsome range and oven units, and gives complete specification data. Two tags are carried proudly by the equipment: the AGA approval seal and the Good Design certificate awarded by the Museum of Modern Art.

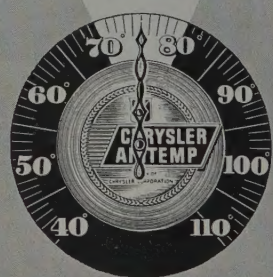
(Continued on page 204)

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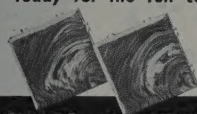
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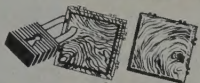
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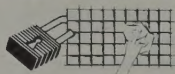
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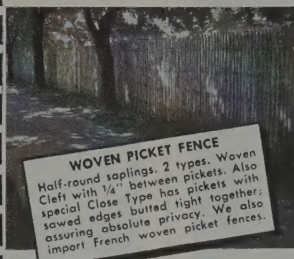
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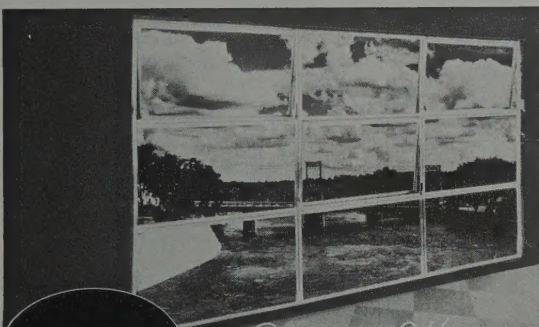
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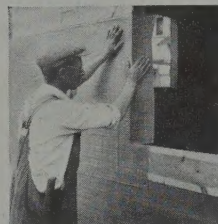
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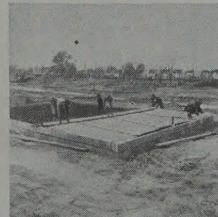
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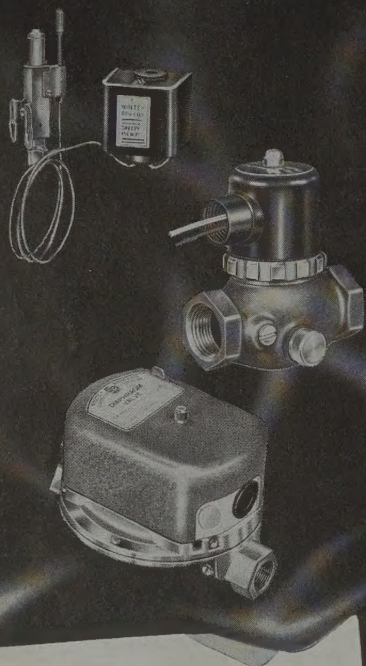


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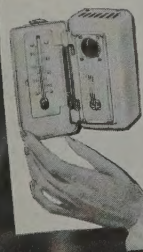
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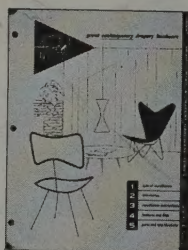
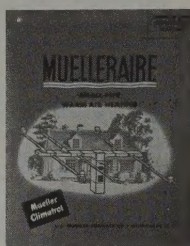


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## TECHNICAL PUBLICATIONS



**HEATING.** *Muelleraire Small-Pipe System.* L. G. Mueller Furnace Co., 2005 West Oklahoma Avenue, Milwaukee 15, Wis. 20 pp. 8 1/2" x 11".

Packaged small-pipe warm-air systems for use with all types of forced warm-air heating are described in this illustrated manual. It gives information on the design of the system, installation procedure, and contains tables for computing furnace and duct sizes. The booklet also pictures the Mueller Climatrol winter air-conditioning units and fittings designed for use with the system. (Cover illustrated above left.)

**CONSTRUCTION.** *Teco Trip-L-Grip Framing Anchors as Joist Hangers.* Timber Engineering Co., 1319 18th Street N. W., Washington 6, D. C. 4 pp. 8 1/2" x 11".

How to use Trip-L-Grip anchors as joist hangers is the subject of this folder. Although designed for all secondary connections in wood frame construction, these anchors are said to be finding their widest use as joist hangers because they save time and materials. According to the pamphlet, the anchors are adjustable on the job to joists of uneven width and depth. They can be applied before installation and eliminate ledger strips and all notching, fitting, and shimming of joists, as well as toenailing. Detail drawings are included in the folder.

**LIGHTING.** *Style Book—New Lighting for Lovelier Living.* Lightolier, Inc., Jersey City 5, N. J. 72 pp. 9" x 12".

Light fixture manufacturer Lightolier has just issued a new style book for contractors, distributors, builders and architects. Each of the 258 fixtures is pictured in a large color rendering and many appear in sketches of room settings. Dimensions and finishes are noted for the different models. If the contemporary designer will flip quickly past the *Crystal* and *Homestead* things, he may find some neatly styled lighting fixtures among the *Lytacaster* group of pulley-type ceiling fixtures with large reflector shades and simple wall brackets, the *Sightron* glass shafts for mounting on walls and ceilings, and the *Calcutite* recessed fixtures. For those with technical bents, the book includes charts on candle-power distribution. Unfortunately, retail prices are left unmentioned due, no doubt, to generally fluctuating indices.

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